US006496802B1

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van Zoest et al.

(10) **Patent No.: US 6,496,802 B1**
(45) **Date of Patent: Dec. 17, 2002**

(54) **SYSTEM AND METHOD FOR PROVIDING ACCESS TO ELECTRONIC WORKS**

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(73) Assignee: **MP3.com, Inc.**, San Diego, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 85 days.

(21) Appl. No.: **09/615,591**

(22) Filed: **Jul. 13, 2000**

Related U.S. Application Data

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(51) **Int. Cl.**[7] **G06F 17/60**
(52) **U.S. Cl.** **705/14**; 705/51
(58) **Field of Search** 705/14, 51

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,990,710	A	11/1976	Hughes	369/34
4,054,911	A	10/1977	Fletcher et al.	348/463
4,300,040	A	11/1981	Gould et al.	235/381
4,355,338	A	10/1982	Yamamoto et al.	360/15
4,449,198	A	5/1984	Kroon et al.	386/83
4,468,751	A	8/1984	Plunkett, Jr.	360/55
4,481,412	A	11/1984	Fields	235/462.79

(List continued on next page.)

FOREIGN PATENT DOCUMENTS

EP 808048 A2 * 11/1997

OTHER PUBLICATIONS

Webopedia entry for "ripper" at http://webopedia.internet-.com/TERM/r/ripper.html, Feb. 27, 2001.*
Lange, Larry, "MP3 compression opens recording industry's coffers to hackers", Electronic Engineering Times, No. 963 (Jul. 21, 1997): 1.*
"mp3–zone", one page with this heading copied from http://members.teleweb.at/sommeregger.sepp/mpsearch/rip-enc.htm, Feb. 27, 2001.*
DIG–Music: An On Demand Digital Musical Selection Systems Utilizing CATV Facilities, Graham M. Campbell et al., Source Translation & Optimization, To: Bryan Richardson, Cooley Godward from Greg Aharonian (Jun. 11, 1982).

(List continued on next page.)

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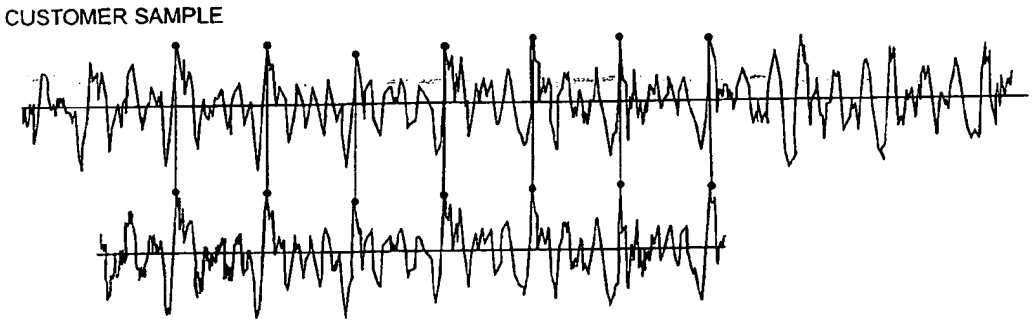
(57) **ABSTRACT**

The present invention is a system and method for providing access to electronic works over a network. In a preferred embodiment, the present invention offers a user access to electronic copies of works, such as songs, albums, movies, or music videos, over a network. The user responds to the offer by requesting to access to a particular work. Before such a request is granted, the present invention may verify that the user is authorized to access to the work. In one embodiment, the user verifies that they are authorized to access an electronic copy of the work by demonstrating that they possess a physical copy of the work. In another embodiment, the user verifies that they are authorized to access an electronic copy of the work by demonstrating that they ordered or purchased a copy of the work. If a user's authorization is verified, the user may then be provided with access to an electronic copy of the work by such techniques as downloading or streaming.

39 Claims, 19 Drawing Sheets



U.S. PATENT DOCUMENTS

4,506,387	A	3/1985	Walter	359/118
4,521,806	A	6/1985	Abraham	775/91
4,703,456	A	10/1987	Arakawa	365/185.08
4,725,977	A	2/1988	Izumi et al.	711/115
4,789,863	A	12/1988	Bush	340/5.9
4,792,849	A	12/1988	McCalley et al.	725/119
4,811,325	A	3/1989	Sharples, Jr. et al.	369/85
4,851,931	A	7/1989	Parker et al.	360/15
4,924,303	A	5/1990	Brandon et al.	725/116
4,937,807	A	6/1990	Weitz et al.	369/85
5,021,893	A	6/1991	Sheffler	360/15
5,041,921	A	8/1991	Scheffler	360/13
5,051,822	A	9/1991	Rhoades	463/25
5,084,768	A	1/1992	Stern et al.	386/98
5,099,422	A	3/1992	Foresman et al.	705/1
5,168,481	A	12/1992	Culbertson et al.	369/2
5,208,665	A	5/1993	McCalley et al.	725/119
5,233,477	A	8/1993	Scheffler	360/15
5,237,157	A	8/1993	Kaplan	235/375
5,260,778	A	11/1993	Kauffman et al.	725/33
5,267,351	A	11/1993	Reber et al.	707/104
5,319,707	A	6/1994	Wasilewski et al.	380/212
5,319,774	A	6/1994	Ainsworth et al.	714/20
5,355,302	A	10/1994	Martin et al.	385/100
5,365,381	A	11/1994	Scheffler	360/15
5,400,401	A	3/1995	Wasilewski et al.	380/112
5,418,654	A	5/1995	Scheffler	360/13
5,440,637	A	8/1995	Van Fleet	381/1
5,481,296	A	1/1996	Cragun et al.	725/136
5,502,601	A	3/1996	Scheffler	360/32
5,532,920	A	7/1996	Hartrick et al.	707/500
5,541,638	A	7/1996	Story	348/7
5,557,541	A	9/1996	Schulhof et al.	700/94
5,563,665	A	10/1996	Chang	348/552
5,572,442	A	11/1996	Schulhof et al.	709/219
5,585,866	A	12/1996	Miller et al.	723/43
5,592,511	A	1/1997	Schoen et al.	375/220
5,600,573	A	2/1997	Hendricks et al.	725/109
5,627,867	A	5/1997	Thomson	377/16
5,629,733	A	5/1997	Youman et al.	725/53
5,629,867	A	5/1997	Goldman	381/77
5,629,980	A	5/1997	Stefik et al.	705/54
5,633,839	A	5/1997	Alexander et al.	369/30
5,638,443	A	6/1997	Stefik et al.	705/54
5,646,992	A	7/1997	Subler et al.	705/53
5,661,787	A	8/1997	Pocock	379/101.01
5,675,734	A	10/1997	Hair	705/26
5,689,648	A	11/1997	Diaz et al.	705/26
5,703,795	A	12/1997	Mankovitz	345/327
5,715,403	A	2/1998	Stefik	705/44
5,721,827	A *	2/1998	Logan et al.	709/217
5,726,909	A	3/1998	Krikorian	364/514 R
5,734,961	A	3/1998	Castille	725/116
5,758,257	A	5/1998	Hertz et al.	725/116
5,794,217	A	8/1998	Allen	705/27
5,806,068	A	9/1998	Shaw et al.	707/103
5,809,246	A	9/1998	Goldman	709/219
5,815,471	A	9/1998	Mince et al.	369/30
5,845,262	A	12/1998	Nozue et al.	705/26
5,877,755	A	3/1999	Helhake	345/327
5,894,119	A	4/1999	Tognazzini	235/375
5,900,830	A	5/1999	Scheffler	341/123
5,913,204	A	6/1999	Kelly	705/500
5,915,090	A	6/1999	Joseph et al.	709/202
5,918,213	A	6/1999	Bernard et al.	705/26
5,931,901	A	8/1999	Wolfe et al.	709/206
5,949,411	A	9/1999	Doerr et al.	345/327
5,949,476	A	9/1999	Pocock et al.	348/24
5,956,491	A	9/1999	Marks	709/250
5,959,944	A	9/1999	Dockes et al.	369/30
5,959,945	A	9/1999	Kleiman	369/30
5,960,411	A	9/1999	Hartman et al.	705/26
5,963,916	A	10/1999	Kaplan	705/26
5,974,004	A	10/1999	Dockes et al.	369/30
5,987,525	A	11/1999	Roberts et al.	709/248
6,005,597	A	12/1999	Barrett et al.	725/46
6,006,251	A	12/1999	Toyouchi et al.	709/203
6,011,758	A	1/2000	Dockes et al.	369/30
6,014,184	A	1/2000	Knee et al.	348/731
6,044,403	A	3/2000	Gerszberg et al.	709/225
6,061,680	A	5/2000	Scherf et al.	707/3
6,088,455	A	7/2000	Logan et al.	380/200
6,088,710	A	7/2000	Dreyer et al.	707/517
6,092,105	A	7/2000	Goldman	709/217
6,092,197	A	7/2000	Coueignoux	713/200
2001/0033659	A1	10/2001	Eisenberg	380/203

OTHER PUBLICATIONS

Cyberstation goes on the air in show–biz fashion, David Bank, San Jose Mercury News (May 4, 1994): 12D and 20 D.

Printouts of XMCD Website, http:11www.ibiblio.org/tkan/xmcdl, Nov. 13, 2000.

ENVOYPOST: A hybrid Electronic Mail Service, D.J. Rhymas and J.R. Wood, Computer–Board Message Services, Elsevier Science Publishers B. V., 1984, pp. 203–214.

CDNOW Receives Patent for Custom/Digital Technology; Patent Covers the Process for Creating Custom CDs on the World Wide Web, Source: CDNOW, Inc., Yahoo Finance (Nov. 16, 1999).

Sounding Off About Sound, Paul Nicholls, Soft Spot (Jan. 1995): 14.

Log On, Beethoven —*The Beat Goes Online*, Robert Sanchez, Internet World (May 1995): 88–91.

The Merchants of Cyberspace, Anita Amirrezvani, PC World (Apr. 1995): 155–164.

Firms Seek Protecting from Class–Action Suits, Ron Wolf, San Jose Mercury News (Jan. 31, 1994): 10.

Rock Online, Donald St. John, Electronic Entertainment (Jun. 1995): 56–57.

Get Music at Net.Now, Karen Wickre, Computer Life (Mar. 1995).

XMCD Version 1.1. Readme file printout from http:llwww.ibiblio.orgl, Nov. 1, 2000.

XMCD Version 1.2. Readme file printout.

XMCD Version 1.3. Readme file printout.

XMCD Version 2.2. Readme file printout.

XMCD Version 2.3. Readme file printout.

XMCD Version 2.4. Readme file printout.

XMCD Version 2.5. Readme file printout.

XMCD Version 2.6 Readme file printout.

XMCD CD DATABASE. Readme file printout.

CDDB Gracenote. Website printout from http://www.oddb.com/.

A Protest Song–90s Style, David Bank, San Jose Mercury News (Jan. 31, 1994): 10/2 pages).

Home music networks; musicians and marketers are going online, Marie D'Amico, Digital Media v4, n2 (Jul. 12, 1994): 18/2 pages).

U.S. provisional application Ser. No. 60/175,996, Eisenberg, Jan. 13, 2000.

Webopedia definition of "streaming", from http://webopedia.com/TERM/s/streaming.html, on Feb. 6, 2002.

Walter, Mark, "Online Journals" print publishers move from pilot to full rollout Seybold Report on Internet Publishing, vol. 1, No. 6, Feb. 1997, pp. 10(11).

XMCD Version 1.4. Readme file printout.
XMCD Version 2.0. Readme file printout.
XMCD Version 2.1. Readme file printout
XMCD version 1.3 source code stored in a CD.
XMCD version 1.4 source code stored in a CD.
XMCD version 2.0 source code stored in a CD.
XMCD version 2.1 source code stored in a CD.
XMCD version 2.2 source code stored in a CD.
XMCD version 2.3 source code stored in a CD.
XMCD version 2.4 source code stored in a CD.
XMCD version 2.5 source code stored in a CD.
XMCD version 2.6 source code stored in a CD.
CDDBD, version 1.3 source code stored in a CD.
Compressed file CDDBD, version 1.4.639 source code stored in a CD.
XMCD version 1.1 source code stored in a CD.
XMCD version 1.2 source code stored in a CD.

* cited by examiner

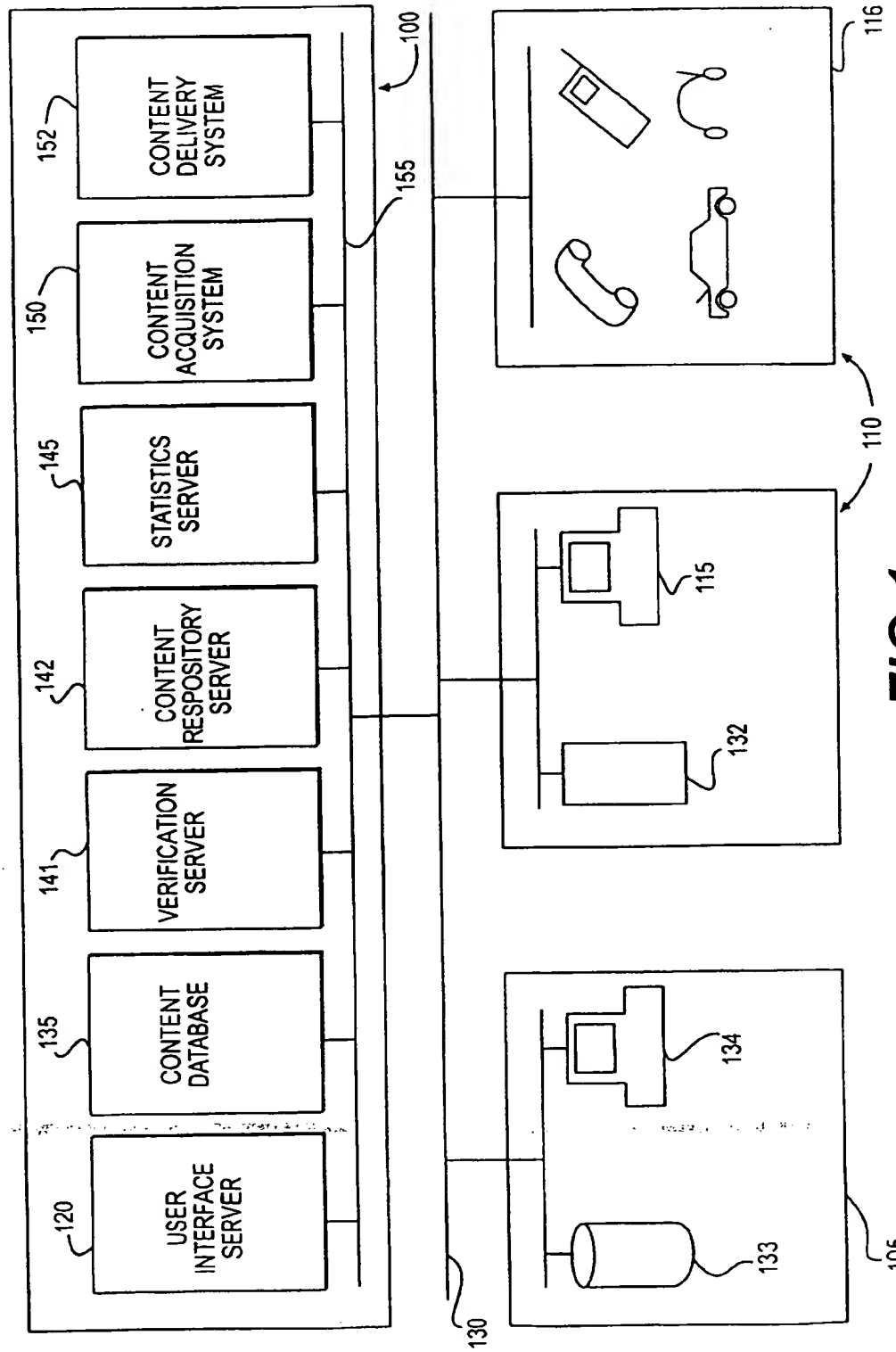

100
152
CONTENT DELIVERY SYSTEM
150
CONTENT ACQUISITION SYSTEM
145
STATISTICS SERVER
142
CONTENT RESPOSITORY SERVER
141
VERIFICATION SERVER
135
CONTENT DATABASE
120
USER INTERFACE SERVER
155
116
110
115
132
134
133
105
130

FIG.1

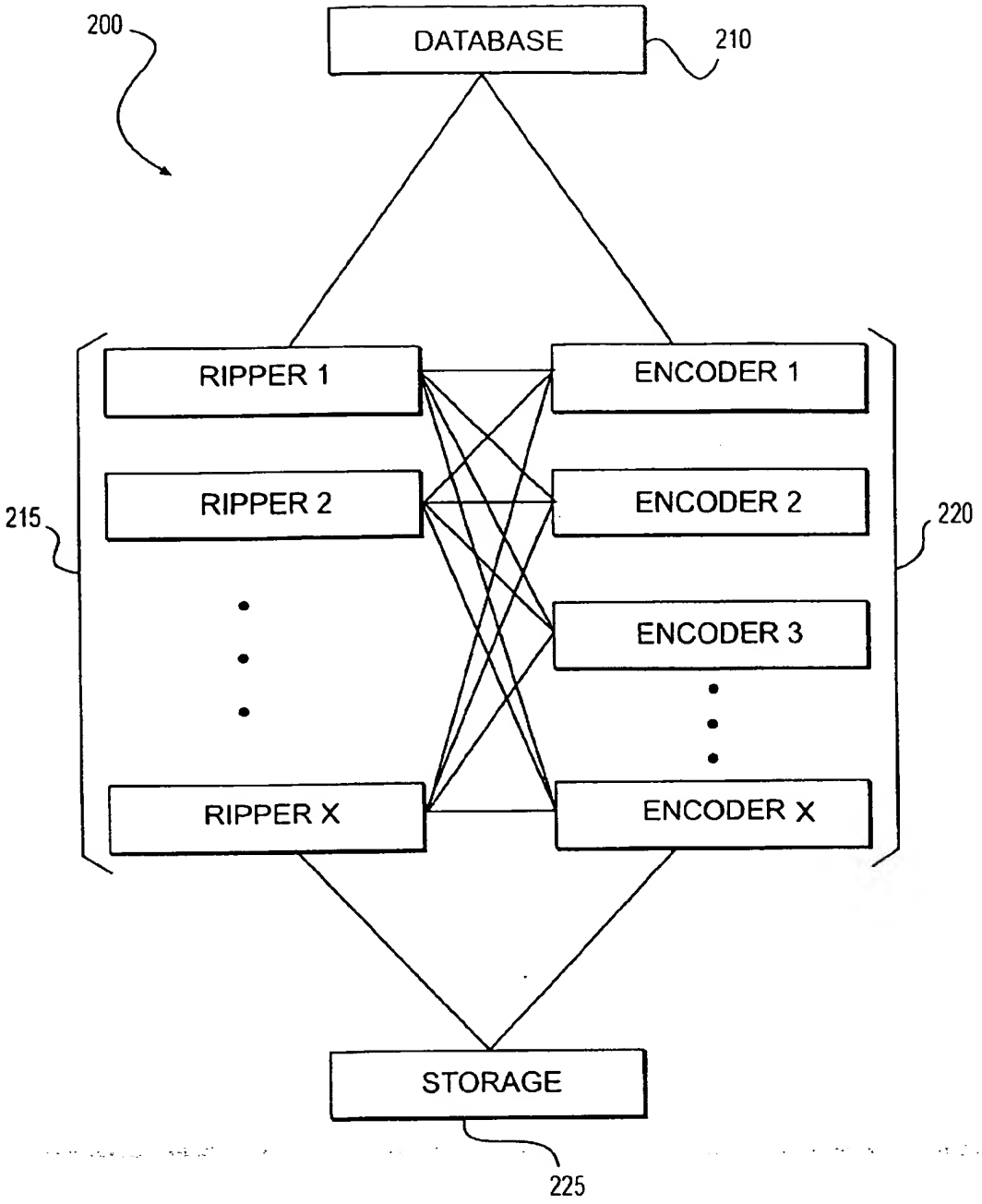

200
DATABASE
210
RIPPER 1
RIPPER 2
RIPPER X
215
ENCODER 1
ENCODER 2
ENCODER 3
ENCODER X
220
STORAGE
225

FIG.2

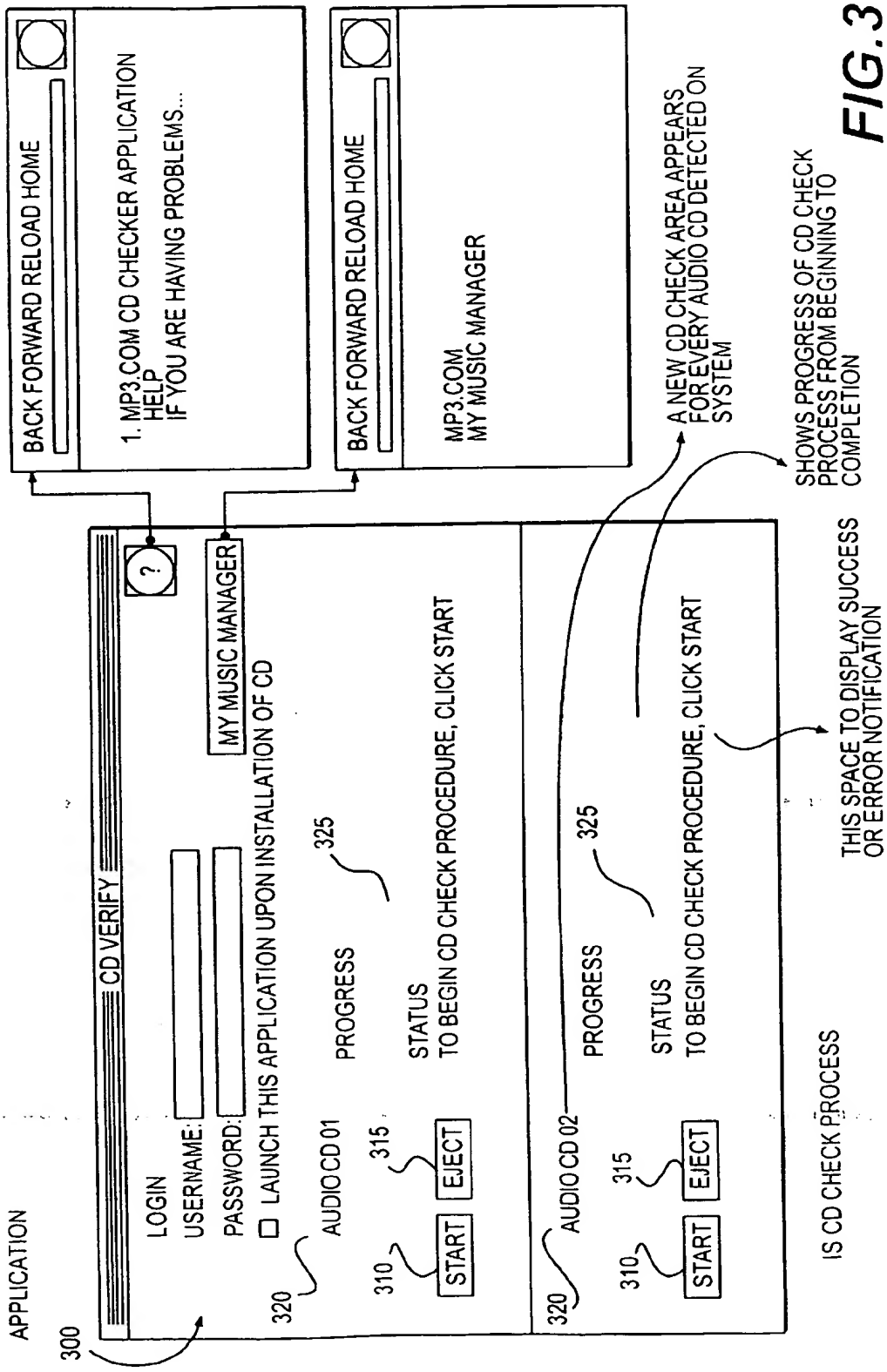

APPLICATION
300
CD VERIFY
LOGIN
USERNAME:
PASSWORD:
LAUNCH THIS APPLICATION UPON INSTALLATION OF CD
MY MUSIC MANAGER
AUDIO CD 01
320
PROGRESS
325
STATUS
TO BEGIN CD CHECK PROCEDURE, CLICK START
310
START
315
EJECT
AUDIO CD 02
320
PROGRESS
325
STATUS
TO BEGIN CD CHECK PROCEDURE, CLICK START
310
START
315
EJECT
IS CD CHECK PROCESS
THIS SPACE TO DISPLAY SUCCESS OR ERROR NOTIFICATION
SHOWS PROGRESS OF CD CHECK PROCESS FROM BEGINNING TO COMPLETION
A NEW CD CHECK AREA APPEARS FOR EVERY AUDIO CD DETECTED ON SYSTEM
BACK FORWARD RELOAD HOME
1. MP3.COM CD CHECKER APPLICATION
HELP
IF YOU ARE HAVING PROBLEMS...
BACK FORWARD RELOAD HOME
MP3.COM
MY MUSIC MANAGER

FIG. 3

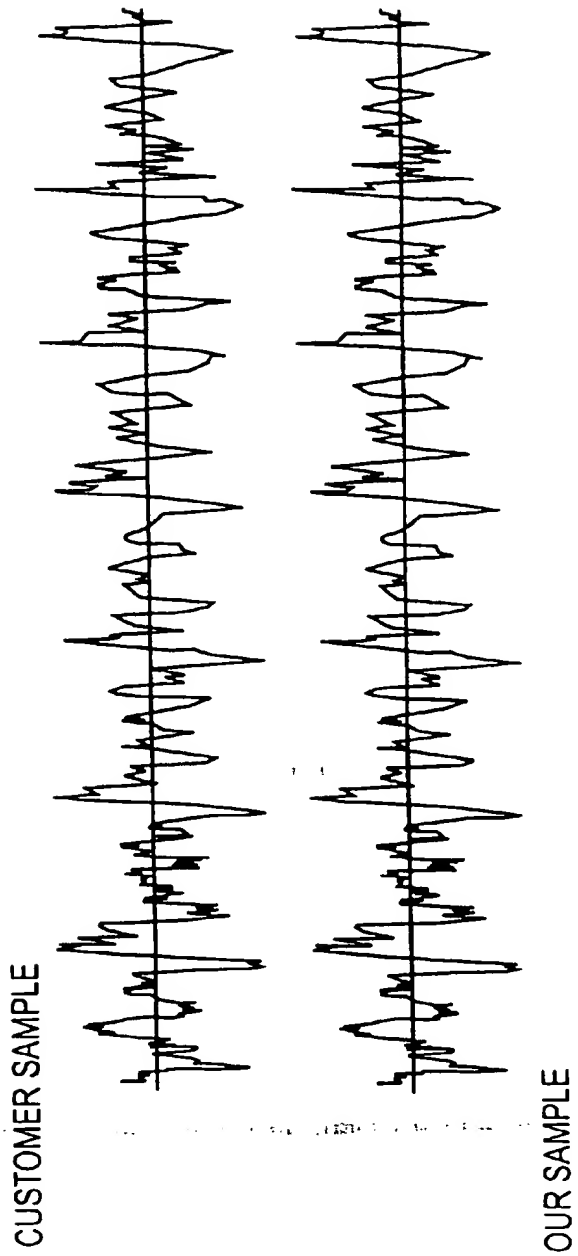


FIG.4

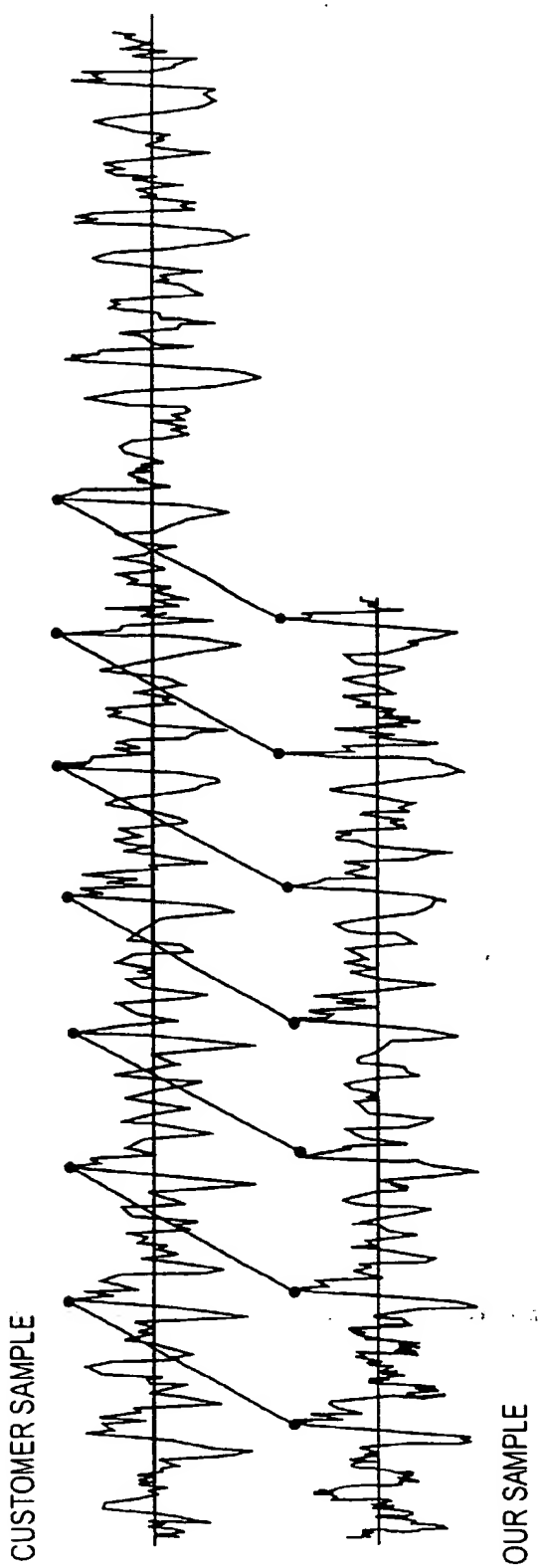


FIG.5

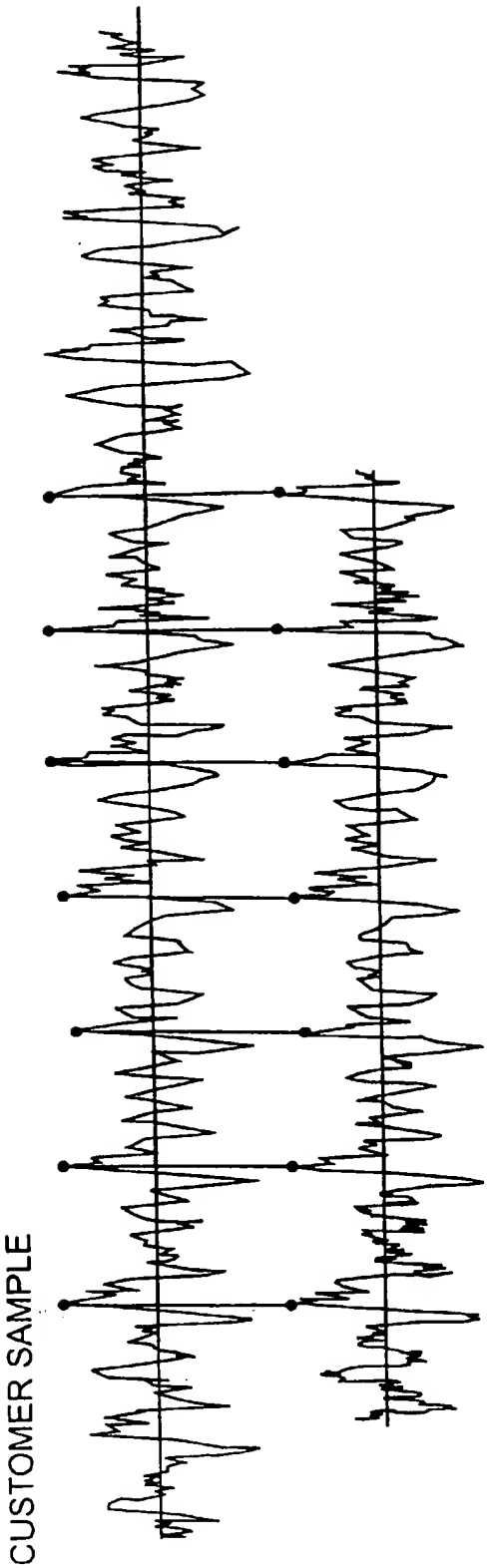


FIG.6

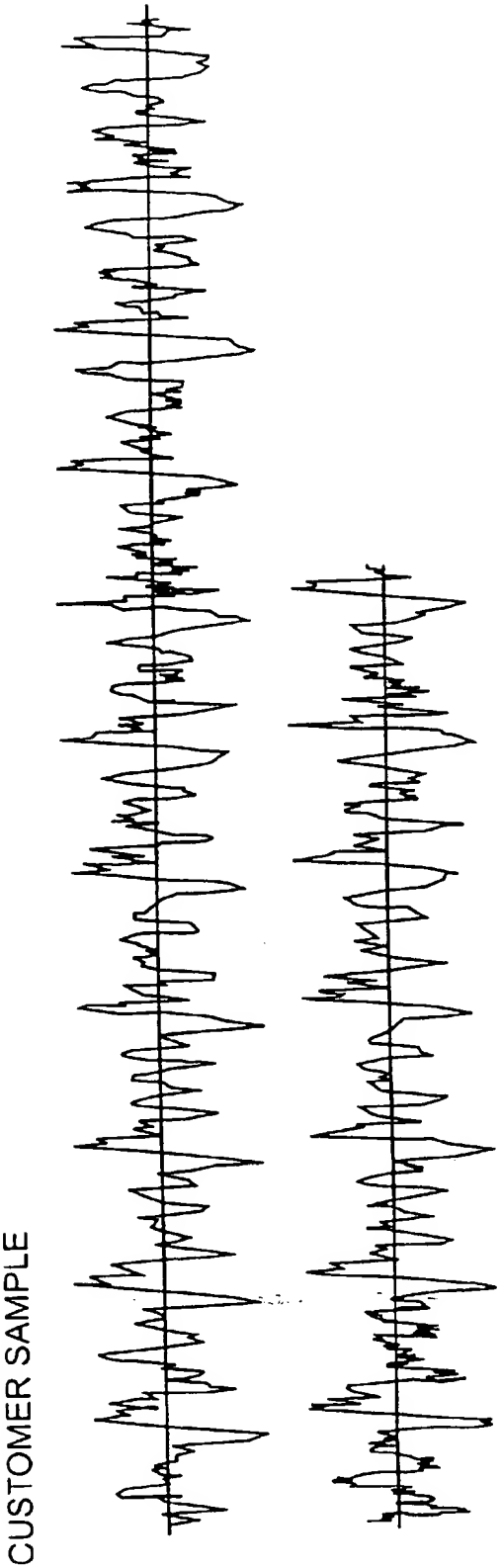


FIG.7

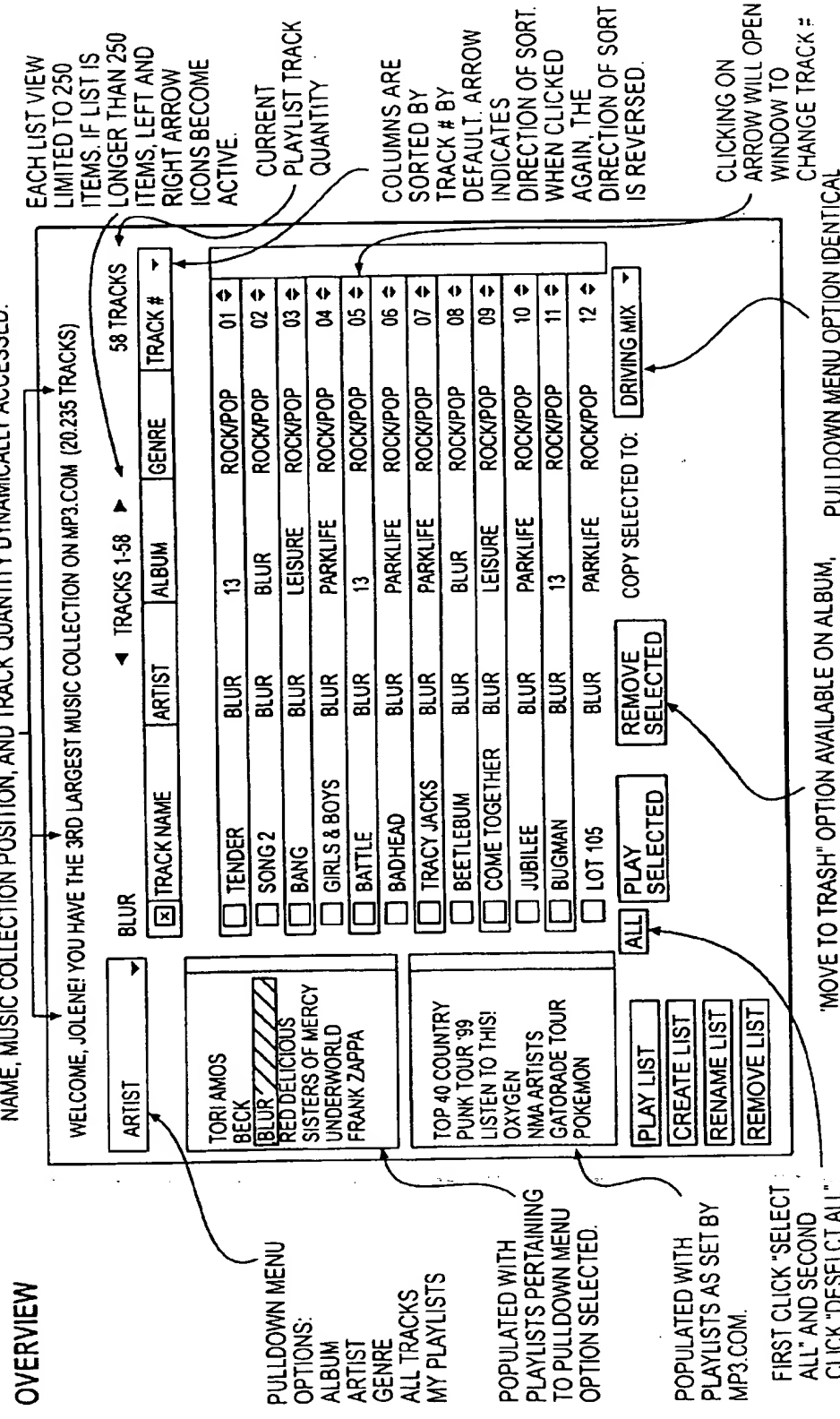

OVERVIEW
NAME, MUSIC COLLECTION POSITION, AND TRACK QUANTITY DYNAMICALLY ACCESSED.
WELCOME, JOLENE! YOU HAVE THE 3RD LARGEST MUSIC COLLECTION ON MP3.COM (20,235 TRACKS)
EACH LIST VIEW LIMITED TO 250 ITEMS. IF LIST IS LONGER THAN 250 ITEMS, LEFT AND RIGHT ARROW ICONS BECOME ACTIVE.
CURRENT PLAYLIST TRACK QUANTITY
COLUMNS ARE SORTED BY TRACK # BY DEFAULT. ARROW INDICATES DIRECTION OF SORT. WHEN CLICKED AGAIN, THE DIRECTION OF SORT IS REVERSED.
CLICKING ON ARROW WILL OPEN WINDOW TO CHANGE TRACK #
ARTIST
BLUR
TRACKS 1-58
58 TRACKS
TRACK NAME
ARTIST
ALBUM
GENRE
TRACK #
TENDER BLUR 13 ROCK/POP 01
SONG 2 BLUR BLUR ROCK/POP 02
BANG BLUR LEISURE ROCK/POP 03
GIRLS & BOYS BLUR PARKLIFE ROCK/POP 04
BATTLE BLUR 13 ROCK/POP 05
BADHEAD BLUR PARKLIFE ROCK/POP 06
TRACY JACKS BLUR PARKLIFE ROCK/POP 07
BEETLEBUM BLUR BLUR ROCK/POP 08
COME TOGETHER BLUR LEISURE ROCK/POP 09
JUBILEE BLUR PARKLIFE ROCK/POP 10
BUGMAN BLUR 13 ROCK/POP 11
LOT 105 BLUR PARKLIFE ROCK/POP 12
ALL
PLAY SELECTED
REMOVE SELECTED
COPY SELECTED TO:
DRIVING MIX
TORI AMOS
BECK
BLUR
RED DELICIOUS
SISTERS OF MERCY
UNDERWORLD
FRANK ZAPPA
TOP 40 COUNTRY
PUNK TOUR '99
LISTEN TO THIS!
OXYGEN
NMA ARTISTS
GATORADE TOUR
POKEMON
PLAY LIST
CREATE LIST
RENAME LIST
REMOVE LIST
"MOVE TO TRASH" OPTION AVAILABLE ON ALBUM, ARTIST, GENRE, RECENT ADDITIONS, AND ALL TRACKS. MY PLAYLISTS AND TRASH WILL HAVE "REMOVE SELECTED" OPTION INSTEAD
PULLDOWN MENU OPTION IDENTICAL TO MY PLAYLISTS PLUS A "NEW PLAYLIST" OPTION.
PULLDOWN MENU OPTIONS: ALBUM ARTIST GENRE ALL TRACKS MY PLAYLISTS
POPULATED WITH PLAYLISTS PERTAINING TO PULLDOWN MENU OPTION SELECTED.
POPULATED WITH PLAYLISTS AS SET BY MP3.COM.
FIRST CLICK "SELECT ALL" AND SECOND CLICK "DESELCT ALL".

FIG. 8

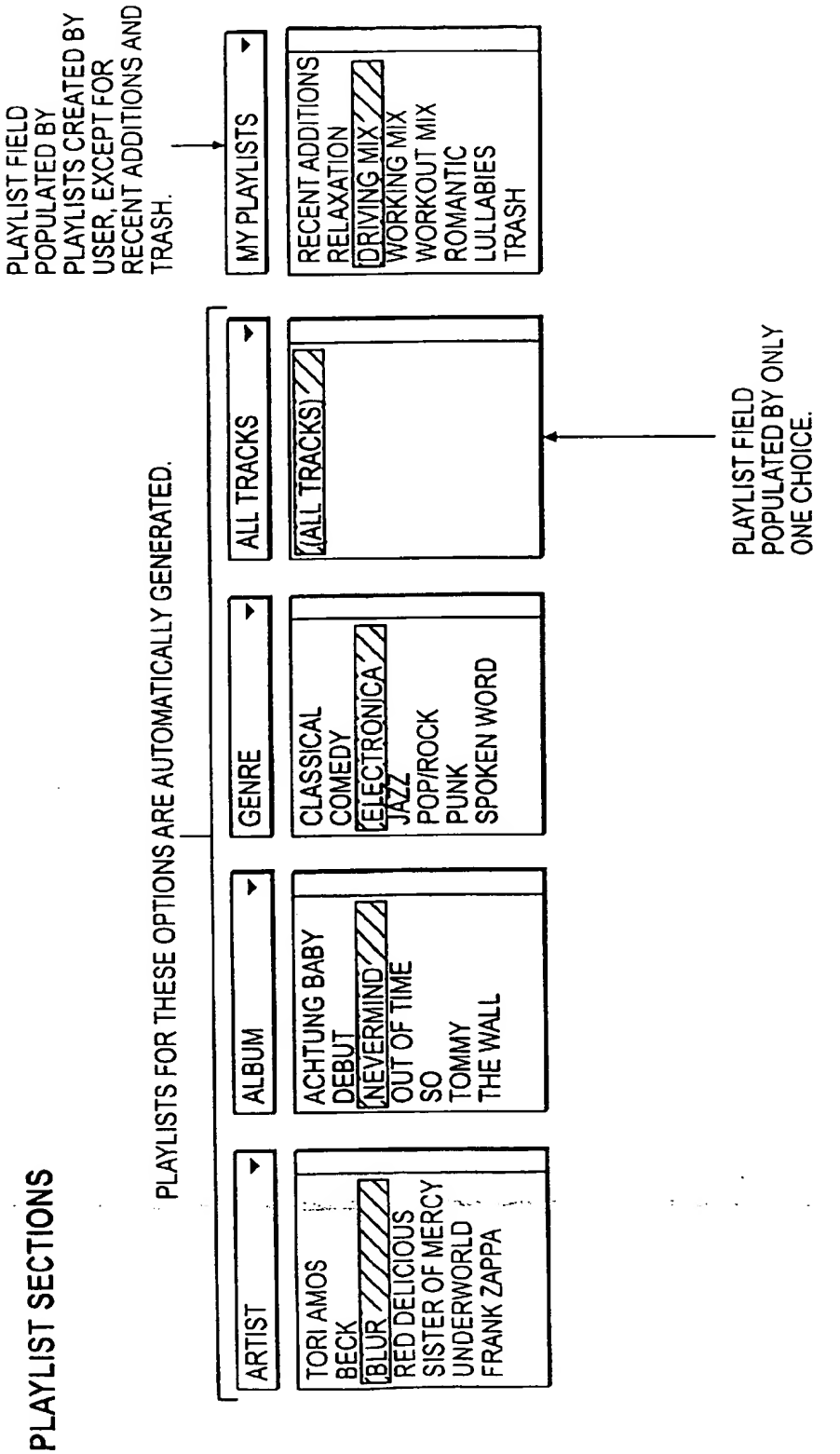

PLAYLIST SECTIONS
PLAYLISTS FOR THESE OPTIONS ARE AUTOMATICALLY GENERATED.
ARTIST
TORI AMOS
BECK
BLUR
RED DELICIOUS
SISTER OF MERCY
UNDERWORLD
FRANK ZAPPA
ALBUM
ACHTUNG BABY
DEBUT
NEVERMIND
OUT OF TIME
SO
TOMMY
THE WALL
GENRE
CLASSICAL
COMEDY
ELECTRONICA
JAZZ
POP/ROCK
PUNK
SPOKEN WORD
ALL TRACKS
(ALL TRACKS)
PLAYLIST FIELD POPULATED BY ONLY ONE CHOICE.
MY PLAYLISTS
RECENT ADDITIONS
RELAXATION
DRIVING MIX
WORKING MIX
WORKOUT MIX
ROMANTIC
LULLABIES
TRASH
PLAYLIST FIELD POPULATED BY PLAYLISTS CREATED BY USER, EXCEPT FOR RECENT ADDITIONS AND TRASH.

FIG. 9

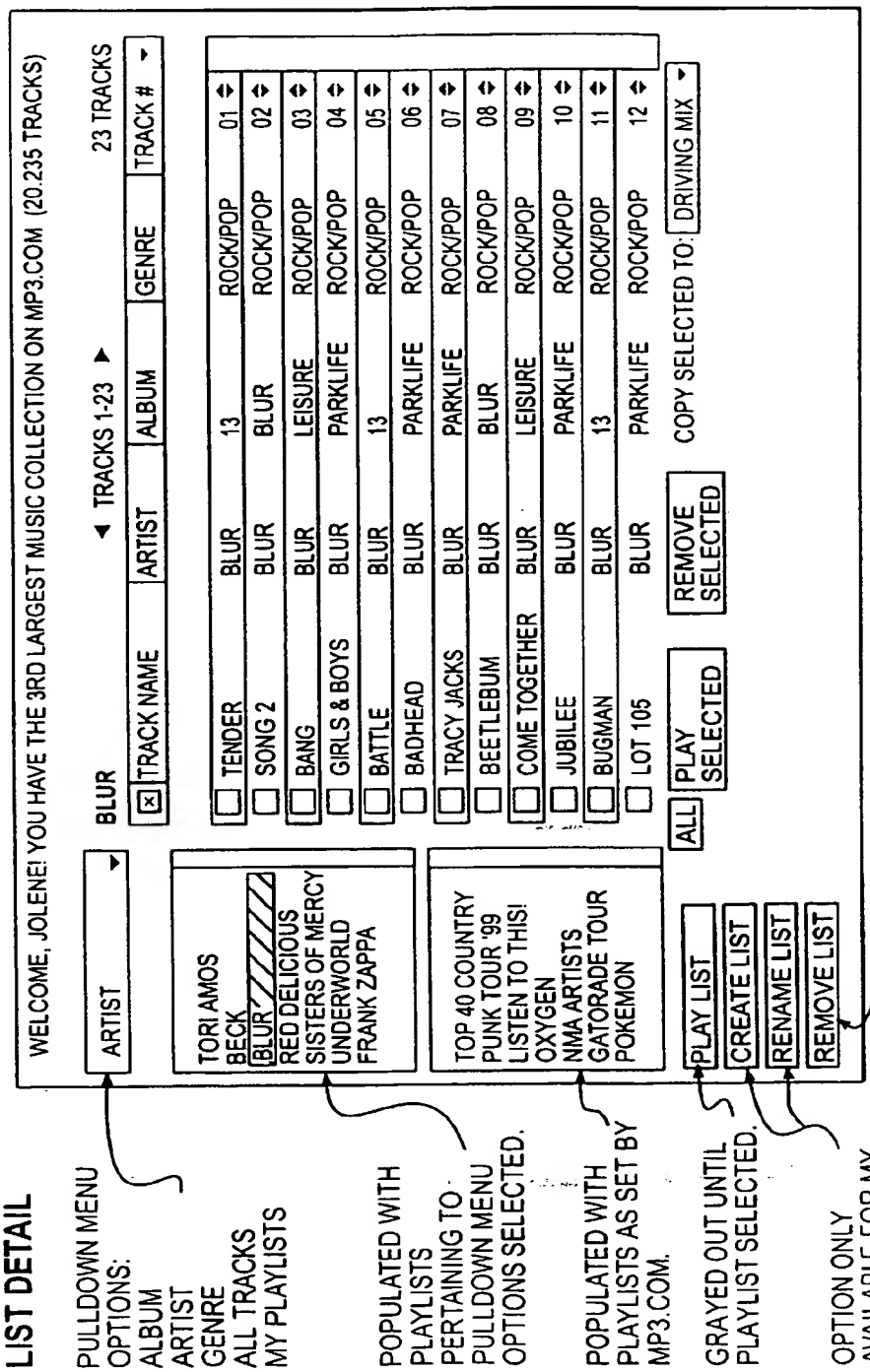

LIST DETAIL
WELCOME, JOLENE! YOU HAVE THE 3RD LARGEST MUSIC COLLECTION ON MP3.COM (20,235 TRACKS)
ARTIST
BLUR
TRACKS 1-23
23 TRACKS
TRACK NAME
ARTIST
ALBUM
GENRE
TRACK #
TENDER BLUR 13 ROCK/POP 01
SONG 2 BLUR BLUR ROCK/POP 02
BANG BLUR LEISURE ROCK/POP 03
GIRLS & BOYS BLUR PARKLIFE ROCK/POP 04
BATTLE BLUR 13 ROCK/POP 05
BADHEAD BLUR PARKLIFE ROCK/POP 06
TRACY JACKS BLUR PARKLIFE ROCK/POP 07
BEETLEBUM BLUR BLUR ROCK/POP 08
COME TOGETHER BLUR LEISURE ROCK/POP 09
JUBILEE BLUR PARKLIFE ROCK/POP 10
BUGMAN BLUR 13 ROCK/POP 11
LOT 105 BLUR PARKLIFE ROCK/POP 12
ALL
PLAY SELECTED
REMOVE SELECTED
COPY SELECTED TO:
DRIVING MIX
TORI AMOS
BECK
BLUR
RED DELICIOUS
SISTERS OF MERCY
UNDERWORLD
FRANK ZAPPA
TOP 40 COUNTRY
PUNK TOUR '99
LISTEN TO THIS!
OXYGEN
NMA ARTISTS
GATORADE TOUR
POKEMON
PLAY LIST
CREATE LIST
RENAME LIST
REMOVE LIST
PULLDOWN MENU OPTIONS:
ALBUM
ARTIST
GENRE
ALL TRACKS
MY PLAYLISTS
POPULATED WITH PLAYLISTS PERTAINING TO PULLDOWN MENU OPTIONS SELECTED.
POPULATED WITH PLAYLISTS AS SET BY MP3.COM.
GRAYED OUT UNTIL PLAYLIST SELECTED.
OPTION ONLY AVAILABLE FOR MY PLAYLIST PLAYLISTS.
OPTION ONLY AVAILABLE FOR MY PLAYLIST AND MP3.COM SET PLAYLISTS.

FIG. 10

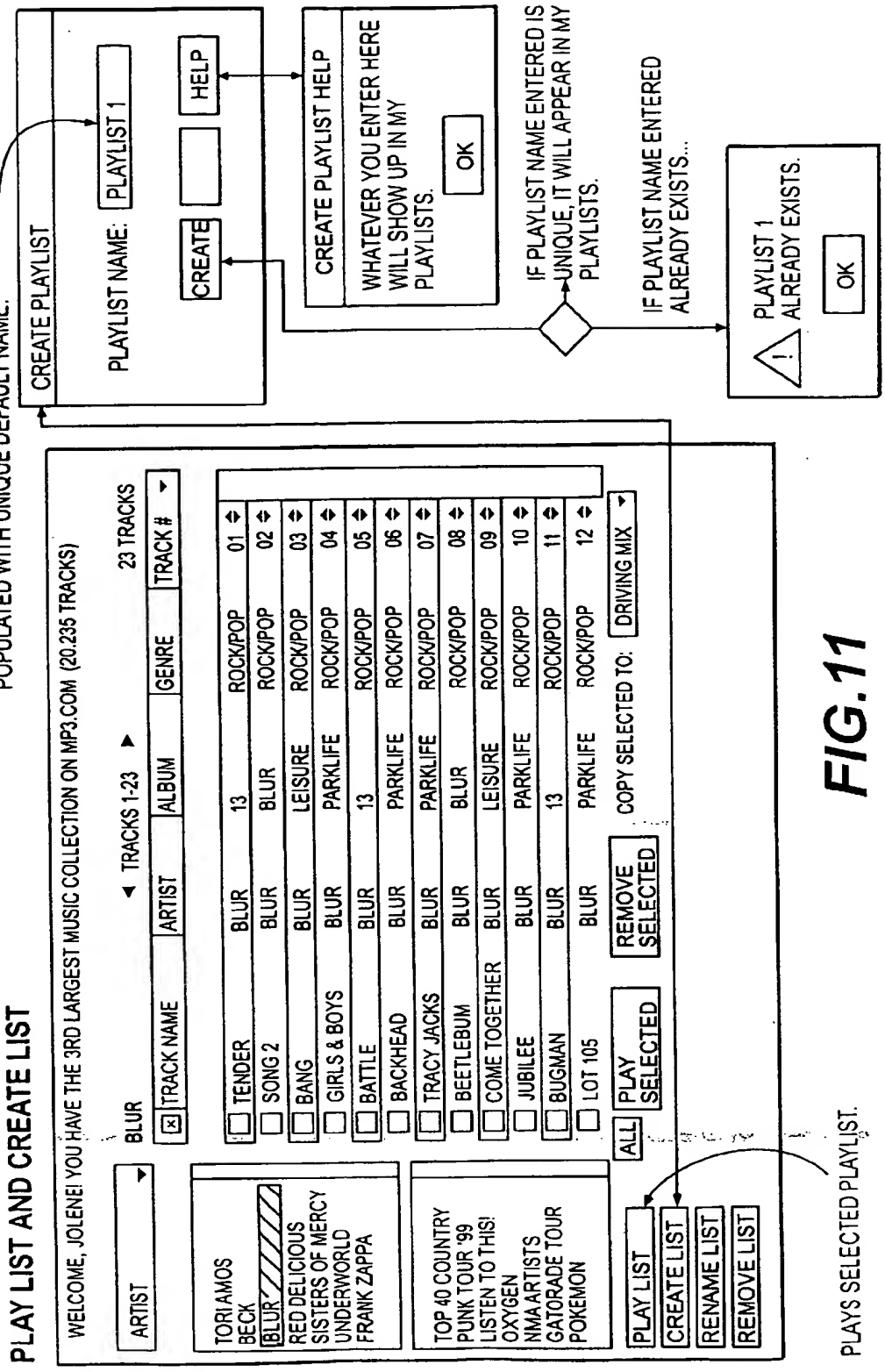

PLAY LIST AND CREATE LIST
WELCOME, JOLENE! YOU HAVE THE 3RD LARGEST MUSIC COLLECTION ON MP3.COM (20,235 TRACKS)
POPULATED WITH UNIQUE DEFAULT NAME.
CREATE PLAYLIST
PLAYLIST NAME: PLAYLIST 1
CREATE
HELP
CREATE PLAYLIST HELP
WHATEVER YOU ENTER HERE WILL SHOW UP IN MY PLAYLISTS.
OK
IF PLAYLIST NAME ENTERED IS UNIQUE, IT WILL APPEAR IN MY PLAYLISTS.
IF PLAYLIST NAME ENTERED ALREADY EXISTS...
PLAYLIST 1 ALREADY EXISTS.
OK
ARTIST
BLUR
TRACKS 1-23
23 TRACKS
TRACK NAME
ARTIST
ALBUM
GENRE
TRACK #
TENDER BLUR 13 ROCK/POP 01
SONG 2 BLUR BLUR ROCK/POP 02
BANG BLUR LEISURE ROCK/POP 03
GIRLS & BOYS BLUR PARKLIFE ROCK/POP 04
BATTLE BLUR 13 ROCK/POP 05
BACKHEAD BLUR PARKLIFE ROCK/POP 06
TRACY JACKS BLUR PARKLIFE ROCK/POP 07
BEETLEBUM BLUR BLUR ROCK/POP 08
COME TOGETHER BLUR LEISURE ROCK/POP 09
JUBILEE BLUR PARKLIFE ROCK/POP 10
BUGMAN BLUR 13 ROCK/POP 11
LOT 105 BLUR PARKLIFE ROCK/POP 12
TORI AMOS
BECK
BLUR
RED DELICIOUS
SISTERS OF MERCY
UNDERWORLD
FRANK ZAPPA
TOP 40 COUNTRY
PUNK TOUR '99
LISTEN TO THIS!
OXYGEN
NMA ARTISTS
GATORADE TOUR
POKEMON
ALL
PLAY SELECTED
REMOVE SELECTED
COPY SELECTED TO:
DRIVING MIX
PLAY LIST
CREATE LIST
RENAME LIST
REMOVE LIST
PLAYS SELECTED PLAYLIST.

FIG. 11

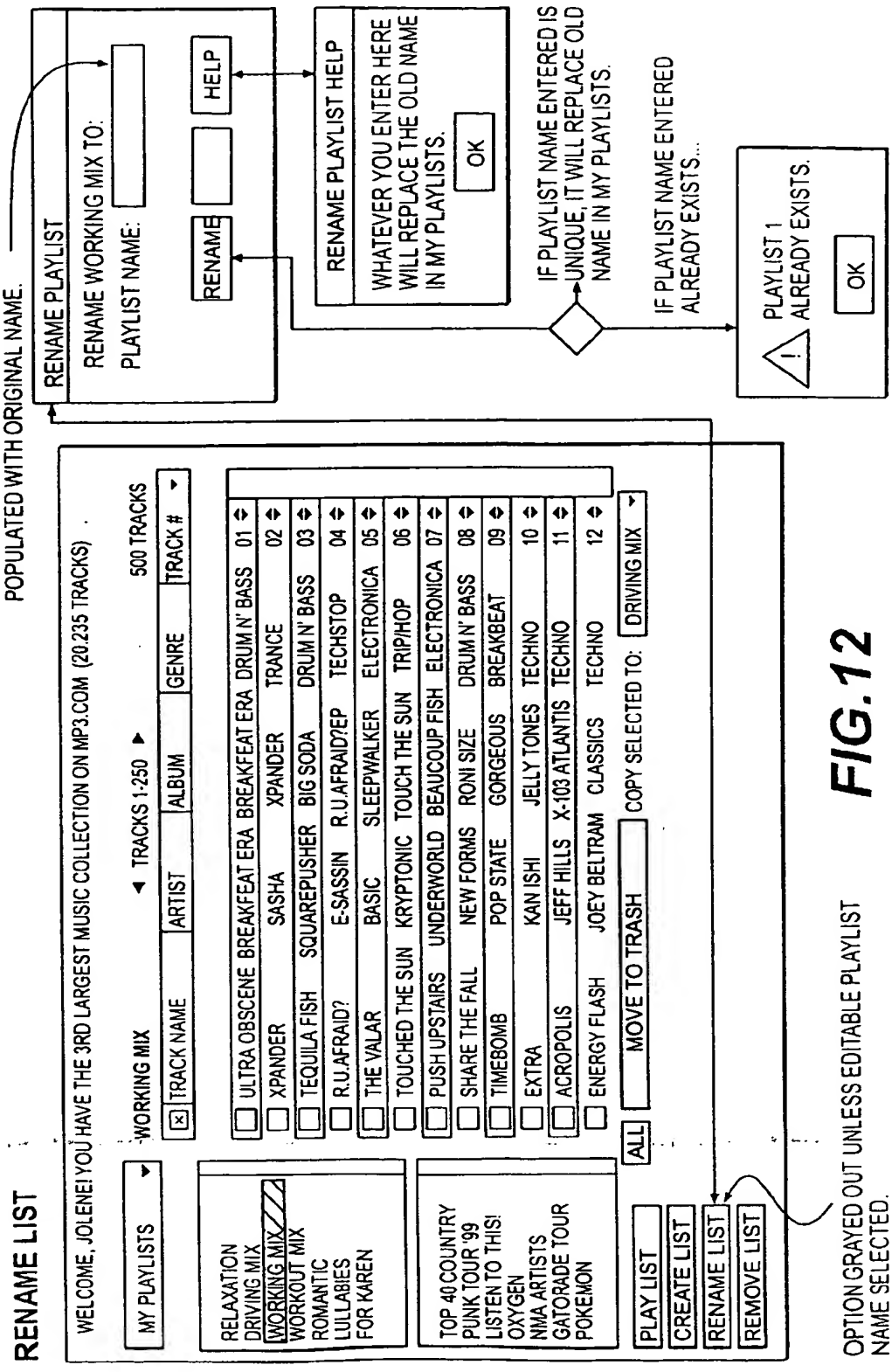

RENAME LIST
WELCOME, JOLENE! YOU HAVE THE 3RD LARGEST MUSIC COLLECTION ON MP3.COM (20,235 TRACKS)
MY PLAYLISTS
RELAXATION
DRIVING MIX
WORKING MIX
WORKOUT MIX
ROMANTIC
LULLABIES
FOR KAREN
TOP 40 COUNTRY
PUNK TOUR '99
LISTEN TO THIS!
OXYGEN
NMA ARTISTS
GATORADE TOUR
POKEMON
PLAY LIST
CREATE LIST
RENAME LIST
REMOVE LIST
WORKING MIX
TRACKS 1-250
500 TRACKS
TRACK NAME
ARTIST
ALBUM
GENRE
TRACK #
ULTRA OBSCENE BREAKFEAT ERA BREAKFEAT ERA DRUM N' BASS 01
XPANDER SASHA XPANDER TRANCE 02
TEQUILA FISH SQUAREPUSHER BIG SODA DRUM N' BASS 03
R.U.AFRAID? E-SASSIN R.U.AFRAID?EP TECHSTOP 04
THE VALAR BASIC SLEEPWALKER ELECTRONICA 05
TOUCHED THE SUN KRYPTONIC TOUCH THE SUN TRIP/HOP 06
PUSH UPSTAIRS UNDERWORLD BEAUCOUP FISH ELECTRONICA 07
SHARE THE FALL NEW FORMS RONI SIZE DRUM N' BASS 08
TIMEBOMB POP STATE GORGEOUS BREAKBEAT 09
EXTRA KAN ISHI JELLY TONES TECHNO 10
ACROPOLIS JEFF HILLS X-103 ATLANTIS TECHNO 11
ENERGY FLASH JOEY BELTRAM CLASSICS TECHNO 12
ALL
MOVE TO TRASH
COPY SELECTED TO:
DRIVING MIX
POPULATED WITH ORIGINAL NAME.
RENAME PLAYLIST
RENAME WORKING MIX TO:
PLAYLIST NAME:
RENAME
HELP
RENAME PLAYLIST HELP
WHATEVER YOU ENTER HERE WILL REPLACE THE OLD NAME IN MY PLAYLISTS.
OK
IF PLAYLIST NAME ENTERED IS UNIQUE, IT WILL REPLACE OLD NAME IN MY PLAYLISTS.
IF PLAYLIST NAME ENTERED ALREADY EXISTS...
PLAYLIST 1 ALREADY EXISTS.
OK
OPTION GRAYED OUT UNLESS EDITABLE PLAYLIST NAME SELECTED.

FIG. 12

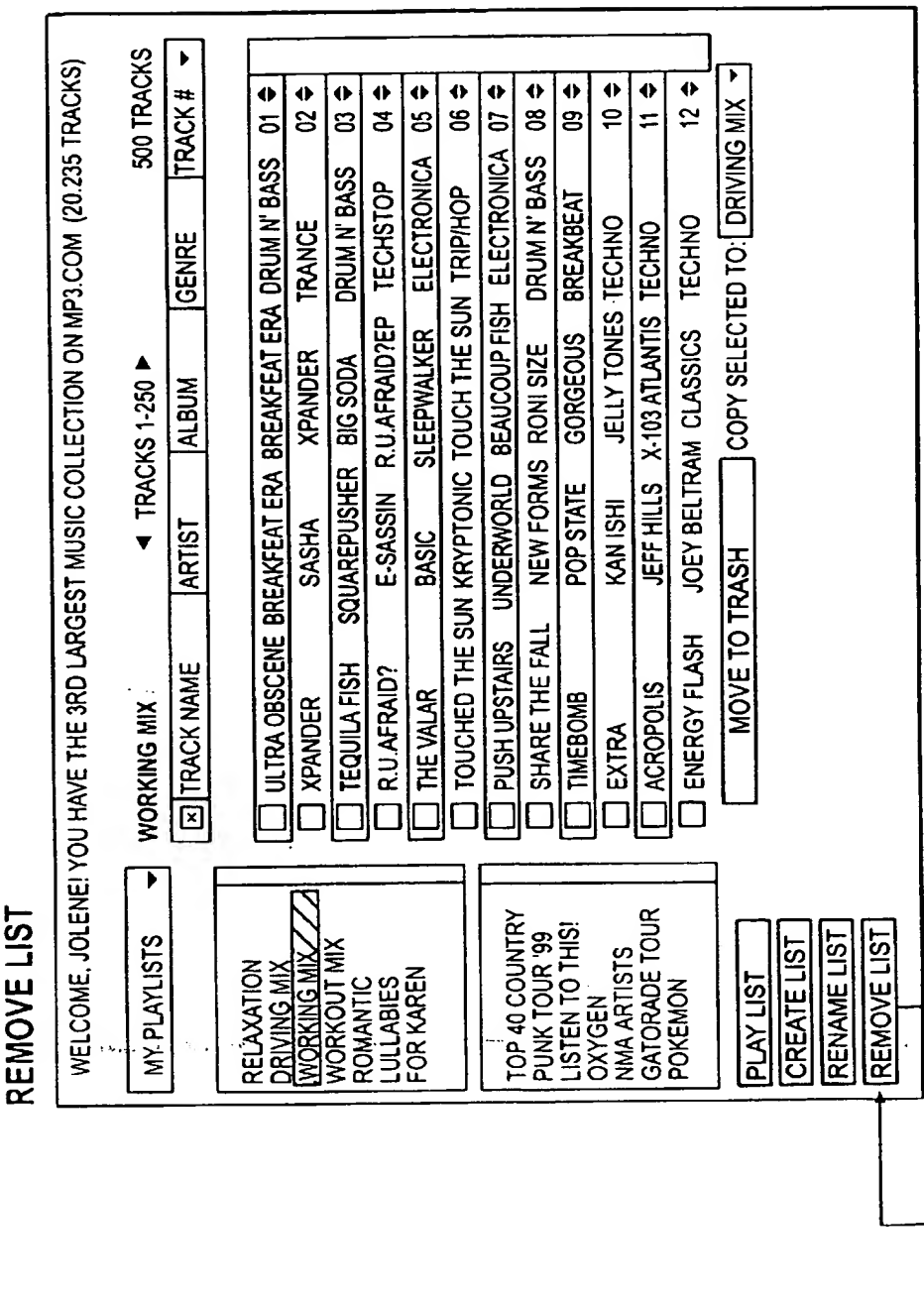

REMOVE LIST
WELCOME, JOLENE! YOU HAVE THE 3RD LARGEST MUSIC COLLECTION ON MP3.COM (20,235 TRACKS)
MY PLAYLISTS
RELAXATION
DRIVING MIX
WORKING MIX
WORKOUT MIX
ROMANTIC
LULLABIES
FOR KAREN
TOP 40 COUNTRY
PUNK TOUR '99
LISTEN TO THIS!
OXYGEN
NMA ARTISTS
GATORADE TOUR
POKEMON
PLAY LIST
CREATE LIST
RENAME LIST
REMOVE LIST
WORKING MIX
◄ TRACKS 1-250 ►
500 TRACKS
TRACK NAME
ARTIST
ALBUM
GENRE
TRACK #
ULTRA OBSCENE BREAKFEAT ERA BREAKFEAT ERA DRUM N' BASS 01
XPANDER SASHA XPANDER TRANCE 02
TEQUILA FISH SQUAREPUSHER BIG SODA DRUM N' BASS 03
R.U.AFRAID? E-SASSIN R.U.AFRAID?EP TECHSTOP 04
THE VALAR BASIC SLEEPWALKER ELECTRONICA 05
TOUCHED THE SUN KRYPTONIC TOUCH THE SUN TRIP/HOP 06
PUSH UPSTAIRS UNDERWORLD BEAUCOUP FISH ELECTRONICA 07
SHARE THE FALL NEW FORMS RONI SIZE DRUM N' BASS 08
TIMEBOMB POP STATE GORGEOUS BREAKBEAT 09
EXTRA KAN ISHI JELLY TONES TECHNO 10
ACROPOLIS JEFF HILLS X-103 ATLANTIS TECHNO 11
ENERGY FLASH JOEY BELTRAM CLASSICS TECHNO 12
MOVE TO TRASH
COPY SELECTED TO: DRIVING MIX
PLAYLIST REMOVED
OPTION GRAYED OUT UNLESS EDITABLE PLAYLIST NAME SELECTED.

FIG. 13

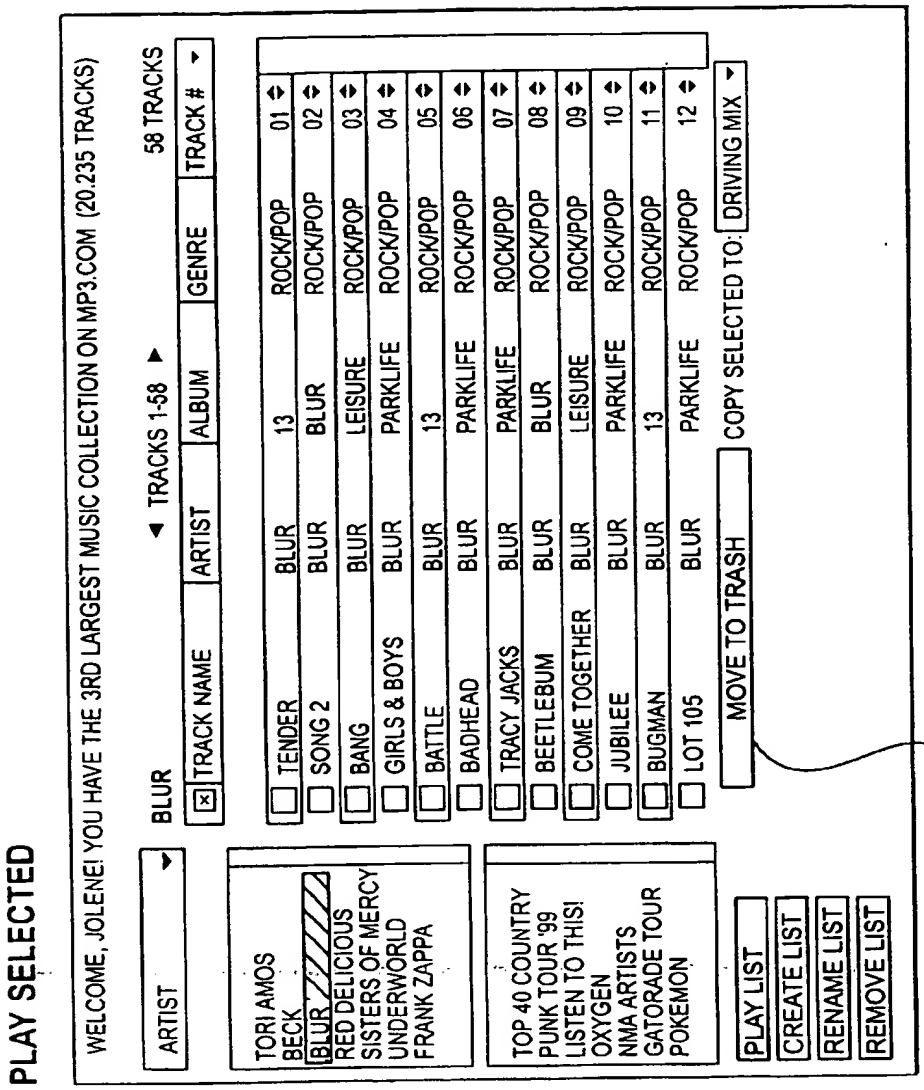

PLAY SELECTED
WELCOME, JOLENE! YOU HAVE THE 3RD LARGEST MUSIC COLLECTION ON MP3.COM (20,235 TRACKS)
ARTIST
BLUR
◄ TRACKS 1-58 ►
58 TRACKS
TRACK NAME
ARTIST
ALBUM
GENRE
TRACK #
TORI AMOS
BECK
BLUR
RED DELICIOUS
SISTERS OF MERCY
UNDERWORLD
FRANK ZAPPA
TOP 40 COUNTRY
PUNK TOUR '99
LISTEN TO THIS!
OXYGEN
NMA ARTISTS
GATORADE TOUR
POKEMON
TENDER BLUR 13 ROCK/POP 01
SONG 2 BLUR BLUR ROCK/POP 02
BANG BLUR LEISURE ROCK/POP 03
GIRLS & BOYS BLUR PARKLIFE ROCK/POP 04
BATTLE BLUR 13 ROCK/POP 05
BADHEAD BLUR PARKLIFE ROCK/POP 06
TRACY JACKS BLUR PARKLIFE ROCK/POP 07
BEETLEBUM BLUR BLUR ROCK/POP 08
COME TOGETHER BLUR LEISURE ROCK/POP 09
JUBILEE BLUR PARKLIFE ROCK/POP 10
BUGMAN BLUR 13 ROCK/POP 11
LOT 105 BLUR PARKLIFE ROCK/POP 12
MOVE TO TRASH
COPY SELECTED TO: DRIVING MIX
PLAY LIST
CREATE LIST
RENAME LIST
REMOVE LIST
OPTION GRAYED OUT UNLESS AT LEAST ONE SONG IS SELECTED. WILL PLAY SONGS IN ORDER OF SELECTION.

FIG. 14

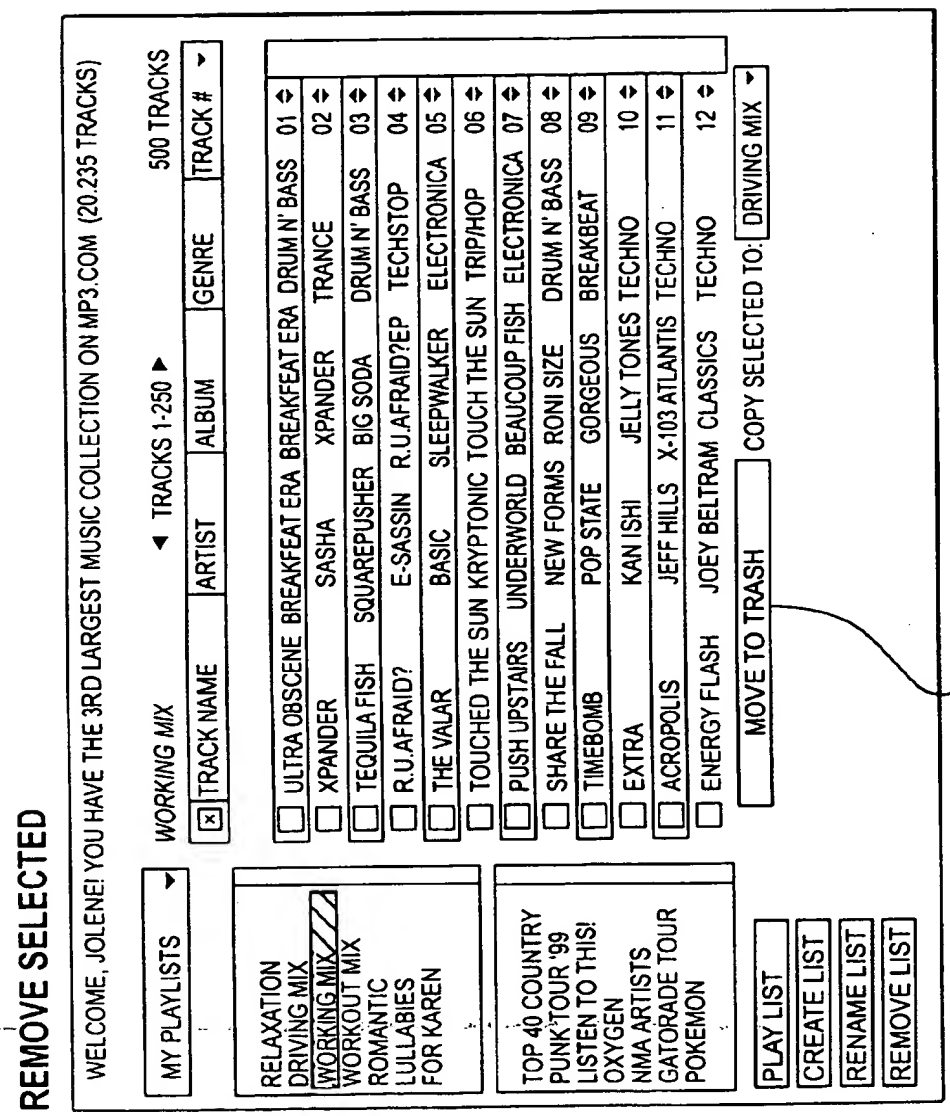

REMOVE SELECTED
WELCOME, JOLENE! YOU HAVE THE 3RD LARGEST MUSIC COLLECTION ON MP3.COM (20,235 TRACKS)
MY PLAYLISTS
WORKING MIX
◄ TRACKS 1-250 ►
500 TRACKS
TRACK NAME
ARTIST
ALBUM
GENRE
TRACK #
RELAXATION
DRIVING MIX
WORKING MIX
WORKOUT MIX
ROMANTIC
LULLABIES
FOR KAREN
TOP 40 COUNTRY
PUNK'TOUR '99
LISTEN TO THIS!
OXYGEN
NMA ARTISTS
GATORADE TOUR
POKEMON
PLAY LIST
CREATE LIST
RENAME LIST
REMOVE LIST
ULTRA OBSCENE BREAKFEAT ERA BREAKFEAT ERA DRUM N' BASS 01
XPANDER SASHA XPANDER TRANCE 02
TEQUILA FISH SQUAREPUSHER BIG SODA DRUM N' BASS 03
R.U.AFRAID? E-SASSIN R.U.AFRAID?EP TECHSTOP 04
THE VALAR BASIC SLEEPWALKER ELECTRONICA 05
TOUCHED THE SUN KRYPTONIC TOUCH THE SUN TRIP/HOP 06
PUSH UPSTAIRS UNDERWORLD BEAUCOUP FISH ELECTRONICA 07
SHARE THE FALL NEW FORMS RONI SIZE DRUM N' BASS 08
TIMEBOMB POP STATE GORGEOUS BREAKBEAT 09
EXTRA KAN ISHI JELLY TONES TECHNO 10
ACROPOLIS JEFF HILLS X-103 ATLANTIS TECHNO 11
ENERGY FLASH JOEY BELTRAM CLASSICS TECHNO 12
MOVE TO TRASH
COPY SELECTED TO: DRIVING MIX
SELECTED TRACKS REMOVED FROM THIS PLAYLIST AND PLACED INTO TRASH.

FIG. 15

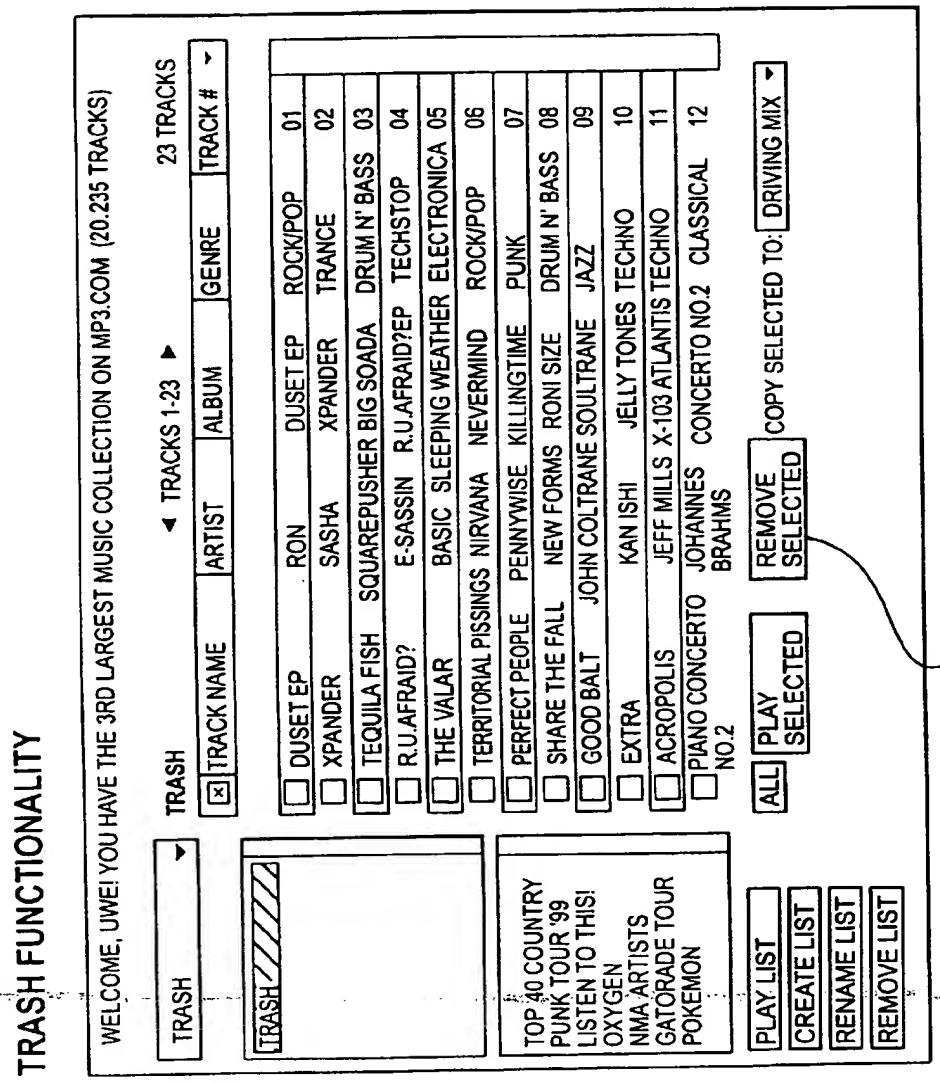

TRASH FUNCTIONALITY
WELCOME, UWE! YOU HAVE THE 3RD LARGEST MUSIC COLLECTION ON MP3.COM (20.235 TRACKS)
TRASH
TRASH
TRACKS 1-23
23 TRACKS
TRACK NAME
ARTIST
ALBUM
GENRE
TRACK #
DUSET EP RON DUSET EP ROCK/POP 01
XPANDER SASHA XPANDER TRANCE 02
TEQUILA FISH SQUAREPUSHER BIG SOADA DRUM N' BASS 03
R.U.AFRAID? E-SASSIN R.U.AFRAID?EP TECHSTOP 04
THE VALAR BASIC SLEEPING WEATHER ELECTRONICA 05
TERRITORIAL PISSINGS NIRVANA NEVERMIND ROCK/POP 06
PERFECT PEOPLE PENNYWISE KILLINGTIME PUNK 07
SHARE THE FALL NEW FORMS RONI SIZE DRUM N' BASS 08
GOOD BALT JOHN COLTRANE SOULTRANE JAZZ 09
EXTRA KAN ISHI JELLY TONES TECHNO 10
ACROPOLIS JEFF MILLS X-103 ATLANTIS TECHNO 11
PIANO CONCERTO NO.2 JOHANNES BRAHMS CONCERTO NO.2 CLASSICAL 12
TOP 40 COUNTRY
PUNK TOUR '99
LISTEN TO THIS!
OXYGEN
NMA ARTISTS
GATORADE TOUR
POKEMON
PLAY LIST
CREATE LIST
RENAME LIST
REMOVE LIST
ALL
PLAY SELECTED
REMOVE SELECTED
COPY SELECTED TO:
DRIVING MIX
REMOVES TRACKS FROM TRASH PLAYLIST. DOES NOT REMOVE THEM FROM ALL TRACKS.

FIG. 16

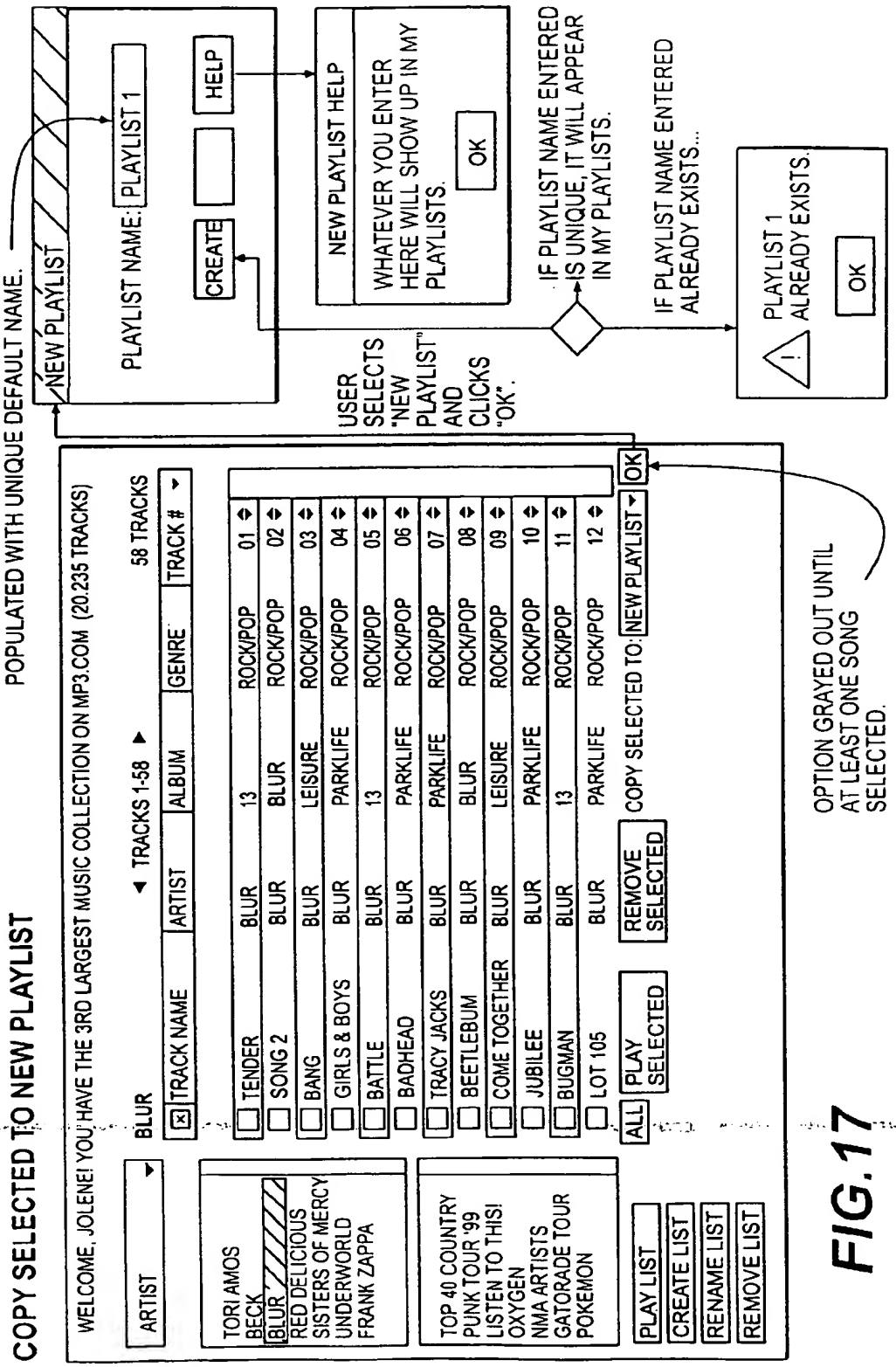

COPY SELECTED TO NEW PLAYLIST
WELCOME, JOLENE! YOU HAVE THE 3RD LARGEST MUSIC COLLECTION ON MP3.COM (20,235 TRACKS)
POPULATED WITH UNIQUE DEFAULT NAME.
NEW PLAYLIST
PLAYLIST NAME: PLAYLIST 1
CREATE
HELP
NEW PLAYLIST HELP
WHATEVER YOU ENTER HERE WILL SHOW UP IN MY PLAYLISTS.
OK
USER SELECTS "NEW PLAYLIST" AND CLICKS "OK".
IF PLAYLIST NAME ENTERED IS UNIQUE, IT WILL APPEAR IN MY PLAYLISTS.
IF PLAYLIST NAME ENTERED ALREADY EXISTS...
PLAYLIST 1 ALREADY EXISTS.
OK
ARTIST
BLUR
◄ TRACKS 1-58 ►
58 TRACKS
TRACK NAME
ARTIST
ALBUM
GENRE
TRACK #
TENDER BLUR 13 ROCK/POP 01
SONG 2 BLUR BLUR ROCK/POP 02
BANG BLUR LEISURE ROCK/POP 03
GIRLS & BOYS BLUR PARKLIFE ROCK/POP 04
BATTLE BLUR 13 ROCK/POP 05
BADHEAD BLUR PARKLIFE ROCK/POP 06
TRACY JACKS BLUR PARKLIFE ROCK/POP 07
BEETLEBUM BLUR BLUR ROCK/POP 08
COME TOGETHER BLUR LEISURE ROCK/POP 09
JUBILEE BLUR PARKLIFE ROCK/POP 10
BUGMAN BLUR 13 ROCK/POP 11
LOT 105 BLUR PARKLIFE ROCK/POP 12
ALL
PLAY SELECTED
REMOVE SELECTED
COPY SELECTED TO: NEW PLAYLIST
OK
TORI AMOS
BECK
BLUR
RED DELICIOUS
SISTERS OF MERCY
UNDERWORLD
FRANK ZAPPA
TOP 40 COUNTRY
PUNK TOUR '99
LISTEN TO THIS!
OXYGEN
NMA ARTISTS
GATORADE TOUR
POKEMON
PLAY LIST
CREATE LIST
RENAME LIST
REMOVE LIST
OPTION GRAYED OUT UNTIL AT LEAST ONE SONG SELECTED.

FIG. 17

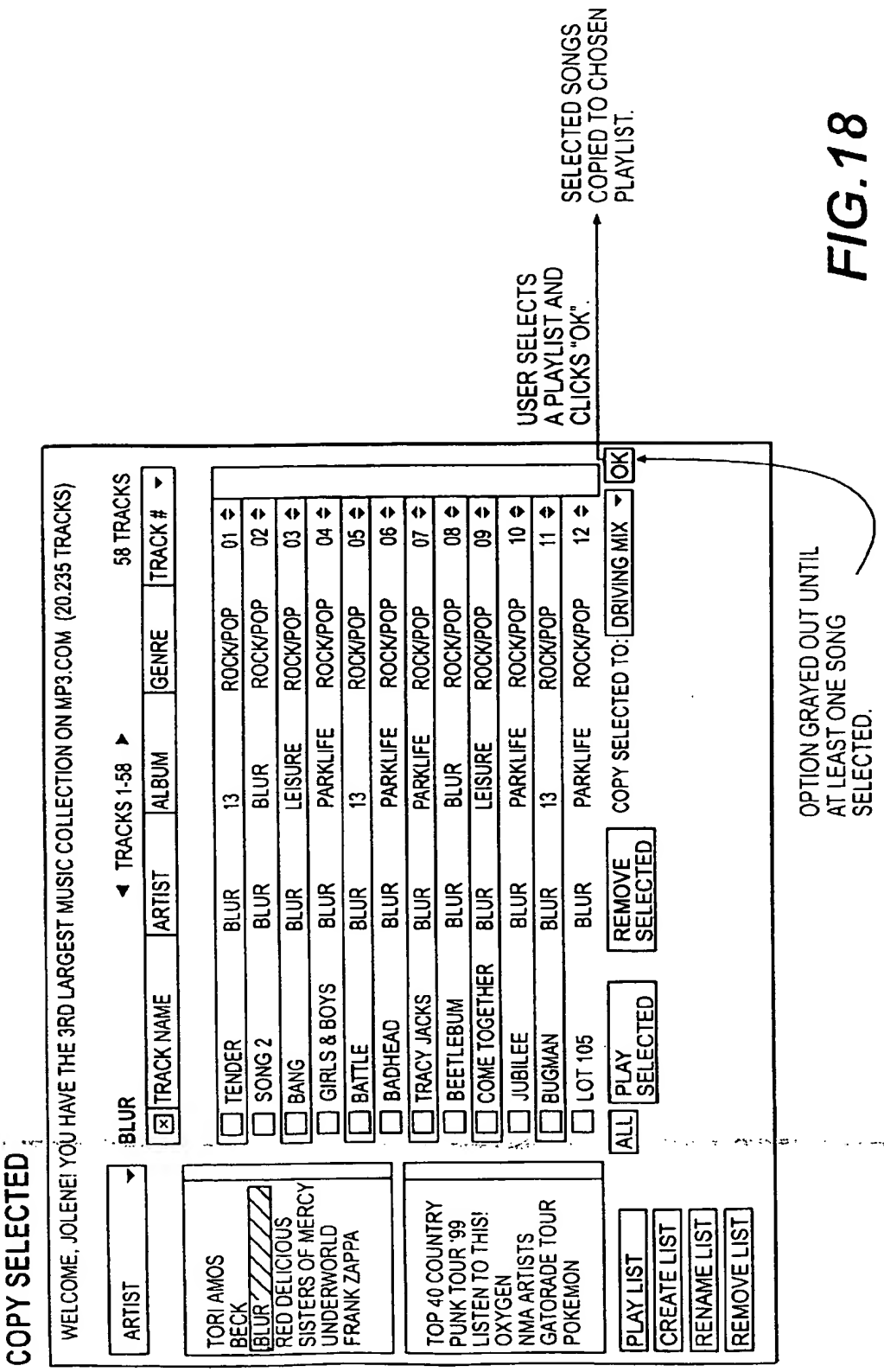

COPY SELECTED
WELCOME, JOLENE! YOU HAVE THE 3RD LARGEST MUSIC COLLECTION ON MP3.COM (20,235 TRACKS)
ARTIST
BLUR
TRACKS 1-58
58 TRACKS
TRACK NAME
ARTIST
ALBUM
GENRE
TRACK #
TENDER BLUR 13 ROCK/POP 01
SONG 2 BLUR BLUR ROCK/POP 02
BANG BLUR LEISURE ROCK/POP 03
GIRLS & BOYS BLUR PARKLIFE ROCK/POP 04
BATTLE BLUR 13 ROCK/POP 05
BADHEAD BLUR PARKLIFE ROCK/POP 06
TRACY JACKS BLUR PARKLIFE ROCK/POP 07
BEETLEBUM BLUR BLUR ROCK/POP 08
COME TOGETHER BLUR LEISURE ROCK/POP 09
JUBILEE BLUR PARKLIFE ROCK/POP 10
BUGMAN BLUR 13 ROCK/POP 11
LOT 105 BLUR PARKLIFE ROCK/POP 12
ALL
PLAY SELECTED
REMOVE SELECTED
COPY SELECTED TO: DRIVING MIX
OK
TORI AMOS
BECK
BLUR
RED DELICIOUS
SISTERS OF MERCY
UNDERWORLD
FRANK ZAPPA
TOP 40 COUNTRY
PUNK TOUR '99
LISTEN TO THIS!
OXYGEN
NMA ARTISTS
GATORADE TOUR
POKEMON
PLAY LIST
CREATE LIST
RENAME LIST
REMOVE LIST
USER SELECTS A PLAYLIST AND CLICKS "OK".
SELECTED SONGS COPIED TO CHOSEN PLAYLIST.
OPTION GRAYED OUT UNTIL AT LEAST ONE SONG SELECTED.

FIG. 18

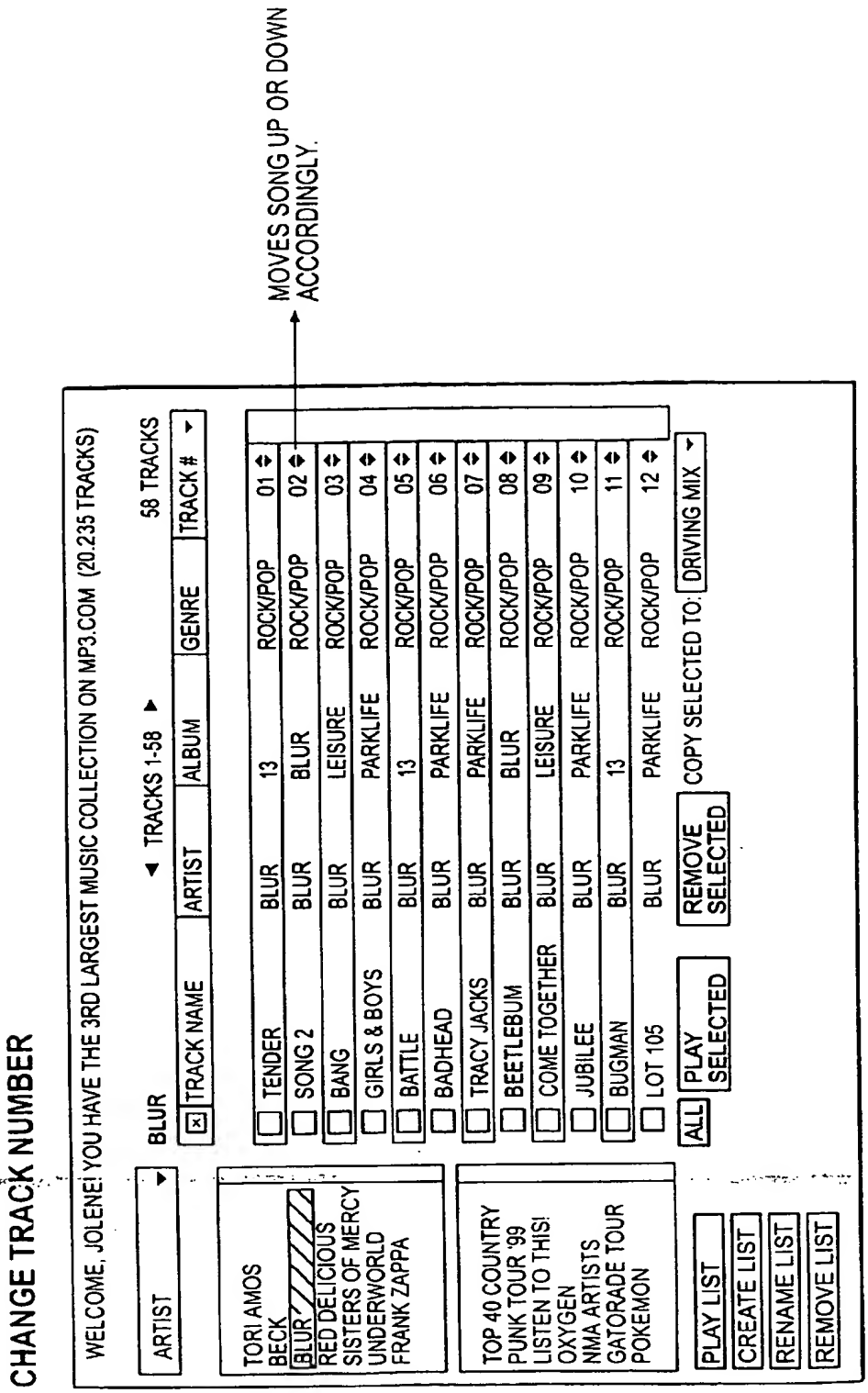

CHANGE TRACK NUMBER
WELCOME, JOLENE! YOU HAVE THE 3RD LARGEST MUSIC COLLECTION ON MP3.COM (20,235 TRACKS)
ARTIST
TORI AMOS
BECK
BLUR
RED DELICIOUS
SISTERS OF MERCY
UNDERWORLD
FRANK ZAPPA
TOP 40 COUNTRY
PUNK TOUR '99
LISTEN TO THIS!
OXYGEN
NMA ARTISTS
GATORADE TOUR
POKEMON
PLAY LIST
CREATE LIST
RENAME LIST
REMOVE LIST
BLUR
◄ TRACKS 1-58 ►
58 TRACKS
TRACK NAME
ARTIST
ALBUM
GENRE
TRACK #
TENDER BLUR 13 ROCK/POP 01
SONG 2 BLUR BLUR ROCK/POP 02
BANG BLUR LEISURE ROCK/POP 03
GIRLS & BOYS BLUR PARKLIFE ROCK/POP 04
BATTLE BLUR 13 ROCK/POP 05
BADHEAD BLUR PARKLIFE ROCK/POP 06
TRACY JACKS BLUR PARKLIFE ROCK/POP 07
BEETLEBUM BLUR BLUR ROCK/POP 08
COME TOGETHER BLUR LEISURE ROCK/POP 09
JUBILEE BLUR PARKLIFE ROCK/POP 10
BUGMAN BLUR 13 ROCK/POP 11
LOT 105 BLUR PARKLIFE ROCK/POP 12
ALL
PLAY SELECTED
REMOVE SELECTED
COPY SELECTED TO:
DRIVING MIX
MOVES SONG UP OR DOWN ACCORDINGLY.

FIG. 19

SYSTEM AND METHOD FOR PROVIDING ACCESS TO ELECTRONIC WORKS

RELATED APPLICATIONS

This application claims the benefit of U.S. Provisional Application No. 60/175,159 entitled SYSTEM AND METHOD FOR ENABLING GLOBAL ACCESS AND INSTANTANEOUS LISTENING TO DIGITAL AUDIO, filed on Jan. 7, 2000. This application is hereby incorporated by reference in its entirety. This application is also related to co-pending U.S. Non-Provisional Application Ser. No. 09/559,176 entitled SYSTEM AND METHOD FOR A MULTIPLE-PARTY TRANSACTION, filed on Apr. 27, 2000; and U.S. Non-Provisional Application Ser. No. 09/615,590 entitled A DISTRIBUTION SYSTEM FOR ELECTRONIC WORKS, filed on Jul. 13, 2000. Each of these applications is hereby incorporated by reference in its entirety.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a system and method for providing access to electronic works over a network.

2. Background

Several technologies exist that enable a user to upload digital music to a Web site storage location and then access that Web site for listening to the music at a later time. For example, mymp3storage.com clients can upload 50 megabytes of music (approximately 12 songs) from the client's hard drive to a storage location on this site, and then download it to a different computer.

Similarly, cablemusic com uses a Javascript Audio Content Kit ("JACK"), which allows listeners to turn Compact Discs ("CDs") into small, high fidelity, music files. Using these web-friendly music files listeners can turn their personal computers into a personal jukebox and simultaneously upload their favorite music to the cablemusic.com site. Once on the cablemusic.com servers, listeners can construct playlists or listen to their individual songs via direct, immediate access to their music on demand from anywhere on the Web.

Myplay.com permits its members to store, organize, download, and share up to 250 megabytes (approximately 65 songs) of music in an online "locker"on its site. The myplay.com system protects the client's locker with a password. Clients can upload their MPEG-1 audio layer-3 ("MP3") and other digital music files to the site and listen to them from any Web-accessible computer in any order selected by the client.

Myplay.com and i-drive.com also facilitate "sideloading" of MP3 files. For example, the myplay.com system permits users to sideload or directly transfer MP3 files from particular MP3 vendors or from a URL currently storing the MP3 file to the user's individual's locker. This sideload or direct transfer feature obviates the steps of downloading the data, converting the data to MP3 format, and uploading the data to the locker. The client can store music by album, genre, and track. A database provides additional information about artists, including discographies and liner notes.

Unlike the systems described above, the present invention requires the user to actually possess the physical. CD, which encourages individuals to buy CDs and thus furthers the protection of copyrighted material.

Another system in the prior art is described in U.S. Pat. No. 5,987,525 (Roberts et al.), which claims a method for synchronizing delivery over a network of visual content from a first computer to second computer with playing of a musical recording on the second computer. The specification describes a method of searching that uses a unique identifier to identify a user's CD in the user's computer. Upon detecting the presence of a CD in the user's computer, a script in the Web page computes the unique identifier corresponding to the CD and sends this unique identifier to the server. This information can include a uniform resource locator ("URL") that relates to the audio CD (e.g., the artist's home page), simple data such as the names of the songs, and also complementary entertainment (i.e., photographs of the band, artwork, animates, and video clips). In an alternative embodiment, when the user inserts an audio CD into their computer, the browser 1) launches, if not already running; 2) computes the CD's unique identifier, and from this unique identifier derives a URL, and 3) retrieves the URL.

SUMMARY OF THE INVENTION

The present invention is a system and method for providing electronic works to a user. In a preferred embodiment, the system and method offers to provide the electronic works to users over a network. The works may be organized by artist, director, category, type of work, or many other organization models. The works may include songs, albums, movies, music videos, or a variety of other types of work. The electronic works may be obtained by acquiring the content from physical copies of the work, such as a content acquisition system including rippers and encoders.

The user generally accesses the electronic works on a machine capable of connecting to the network, such as a personal computer, hand held computer, cell phone, pager, etc. With their machine, the user may browse through the available works and select a desired work or group of works. The user's selection is sent to the party offering the works.

This party receives the request and processes the request. Such processing may include determining that the user subscribes to the service, such as a login procedure, or verifying that the user is entitled to receive the requested electronic work. The user may verify that they are entitled to receive the desired work several ways, including by demonstrating they own a physical copy of the work or demonstrating they ordered the requested work from a retailer or other distributor.

Once the user adequately shows that they are authorized to receive the requested work, the user is provided with access to the work. In a preferred embodiment, this access is provided with a Content Delivery System. Access may include placing a copy of the electronic work in a user's account, sending a copy of the work to the user, streaming the work to the user, broadcasting the work to the user, or providing the user with a pointer to a copy of the electronic work in the user's account. The user may experience the work from any location with access to the network via a transmission lines or satellite connection.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 illustrates an overview of a preferred embodiment of the present invention.

FIG. 2 illustrates a preferred embodiment of the content acquisition system.

FIG. 3 illustrates a preferred embodiment of a web page.

FIGS. 4–7 show data samples used to illustrate the validation process.

FIGS. 8–19 illustrates web pages of a preferred embodiment of an organizational model.

DESCRIPTION OF A PREFERRED EMBODIMENT

As shown in FIG. 1, the preferred embodiment of the present invention may include a Distributor Location **100**, a Partner Location **105**, and a Client Location **110**. The Distributor Location **100** generally provides access to electronic works. Electronic works include any version of work, such as a downloaded work, streamed, or any other file in electronic memory. The Partner Location **105** may represent any potential business partner with the distributor, such a business that sells physical works, such as CDs, Digital Versatile Discs ("DVD"), cassette tapes, records, or any other physical works. The Client Location **110** may represent any potential user of the system, such as individuals or artists. The Distributor Location **100**, Partner Location **105**, and the Client Locations **110** may be configured in a variety of different architectures, such as a client/server or a mainframe. The preferred embodiment uses a client/server architecture. In a client/server architecture, the partner's or client's machine is the requesting machine and the User Interface Server **120** is the supplying machine. The client's machine communicates with the User Interface Server **120** over the network **130**.

The network **130** is preferably the Internet. The Internet is a network generally defined as a collection of processing systems and/or networks that are themselves globally networked together. The systems and networks of the global network are connected via any of a number of protocols, such as Transmission Control Protocol/Internet Protocol ("TCP/IP"). The Internet includes the World Wide Web and all of the resources and users on the Internet that are using HyperText Markup Language ("HTML") as the authoring language and HyperText Transport Protocol ("HTTP") and other protocols, such as File Transfer Protocol ("FTP"), as the transport protocol. However, in other embodiments, the present invention may operate on any type of network, including private or dedicated networks.

Internet Protocol ("IP") is the basic communications language or protocol of the Internet. It can also be used as a communications protocol in private networks called intranets. This and other related protocols provide for file transfer, remote log-in, electronic mail, and other services, including distributed processing, as well as other resources. HTML is the set of symbols or codes inserted in a file intended for display on an Internet browser. The markup tells the web browser how to display a web page's words and images for the user. HTTP is the set of rules for exchanging files (text, graphic images, sound, video and other multimedia files) on the Internet. Relative to the TCP/IP suite of protocols, HTTP is an application protocol. HTTP is typically designed to run primarily over TCP/IP and uses the standard Internet setup, where a client machine requests data from a server machine, the server issues the data, and the client machine or "client browser" displays the data. One format for information transfer is to created documents using HTML, which are preferably made up of standard text as well as formatting codes which indicate how the page should be displayed. The web client machine reads these codes in order to display the page. The hypertext conventions and related functions of the Internet are described in the appendices of U.S. Pat. No. 5,715,314, the entirety of which is herein incorporated by reference.

The Client Locations **110** typically include a personal computer **115** capable of, and configured to, interact over network **130**. For example, Client Locations **110** may include a multimedia-capable personal computer **115**, such as an Apple Macintosh, or IBM compatible, running Linux or Microsoft Windows with a modem for connecting to a network. In alternative embodiments, the client location may be a portable device, such as a laptop computer, cell phone, Palm Pilot®, Walkman®, car stereo, etc.

In a preferred embodiment, the personal computer **115** may also run an Internet browser, such as Microsoft Internet Explorer® or Netscape Navigator®. A browser system is a program that provides a way to look at, read or hear information on the Internet. A browser typically interprets hypertext links, or simple "links," and allows the user to view sites and navigate from one Internet node to another Internet node. A brief overview of web browsers and their interactions is set forth in U.S. Pat. No. 5,774,670, the entirety of which is incorporated by reference. Browsing also refers to the process of moving between HTML pages of a single typical web site. The HTML web page files, or web pages, may include a "homepage." A "homepage" is the main of a web site that typically names and describes the site, and provides links to other web pages or various features of the web site. Clicking refers to the process of indicating a desired link by using a cursor control device, such as a mouse or roller ball.

The Partner Location **105** may include a Server **133**, a personal computer **134**, or any machine capable of communicating over the network **130**. The Server **133** may include a single server or multiple servers depending on the size of the partner, amount of users using the partner, or other system requirements. In a preferred embodiment, the Partner Location **105** uses an application program interface ("API") compatible with the Distributor Location **100**. The partner or retailer API may include a retailer module and associated configuration files. In a preferred embodiment, the retailer API communicates with the User Interface Server **120** or the Verification Server **141** via HTTP. Like the other software programs discussed, the retailer API could be written in one of many alternative programming languages, such as C, C++, Java, etc. In a preferred embodiment, it is written in Perl.

The Distributor Location **100** includes User Interface Server **120**, Content Database **135**, Verification Server **141**, Content Repository Server **142**, Statistics Server **145**, Content Acquisition System, **150**, and Content Delivery System **152**. The User Interface Server **120**, Content Database **135**, Verification Server **141**, Content Repository Server **142**, Statistics Server **145**, Content Acquisition System **150**, and Content Delivery System **152** may be a single server or a plurality of servers, depending on the size of the Distributor Location **100**, amount of users, or other system requirements. This equipment may be connected with a network. In a preferred embodiment, they are connected with a local area network technology, such as Ethernet, Fast Ethernet, Asynchronous Transfer Mode, Fiber Distributed Data Interface, Fiber Channel Interconnect, etc. In a preferred embodiment, this equipment is connected via a local area network using 100 Base-T Ethernet technology.

User Interface Server **120** runs the web site application software and processes some of the transactions and requests associated with the web site, such as logins and content management. The User Interface Server **120** also generates a URL for each request for a work made by a user. The URL generally includes a unique work identifier, a unique user identifier, a time stamp, and session data. In alternative embodiments, the URL may include more or less information.

In a preferred embodiment, the User Interface Server **120** is a dual Intel processor running a Linux operating system

and Apache web server with mod_perl. The user interacts with the User Interface Server **120** when they want to access their account or works. This interaction is done over HTTP using an HTML, Extensible Markup Language ("XML"), or a C Library. The User Interface Server **120** may be accessed from anywhere the user has an Internet connection.

Content Database **135** stores information related to the works and processes request from the client machines to extract the stored data. These works may be audio files, video files, audio-video files, or other types of works. In a preferred embodiment, the Content Database **135** is a dual Intel processor running a Linux operating system and MySQL database. The stored information may include the titles of works, names of the artist, information about the band or performance, UPC data, or any information about the works. For example, if the work is a movie, the Content Database **135** may include a preview of the movie or information about its sound track. This information may be manually entered into the database or provided with the content.

Verification Server **141** verifies that the user is authorized to access an electronic work. The Verification Server **141** may perform a variety of tests or comparison to determine whether a user is authorized to access a work, such as, test a confirmation number, verify that the user possesses a physical work, or verify that the user purchased the work. For example, in response to a request to obtain access to an electronic work, the Verification Server **141** may look-up sample data related to that request, such as track offset data or an actual portion of the work. The Verification Server **141** may also compare this sample data to data extracted from a physical work. Based on this comparison, the Verification Server **141** may determine whether the user claiming possession of the physical work does, in fact, have possession and therefore is authorized to access an electronic work. Alternatively, the Verification Server **141** may also determine the user is authorized to access an electronic work by receiving a message from a Partner Location **105**, such as a retailer. Accessing an electronic work includes obtaining a pointer to the electronic work in a personal account, receiving a downloaded copy of the work, receiving a downloaded copy of the work with electronic watermarks, receiving a stream of the work, obtaining access to listen to an electronic work, or any other means of allowing a user to listen or watch the work.

In a preferred embodiment, the Verification Server **141** is a dual Intel processor running a Linux operating system, Apache web server, and MySQL database. The Verification Server **141** also runs a Perl program as a common gateway interface ("CGI"). To perform its verification, the Verification Server **141** may read data from the Content Database **135** or Content Repository **142**. The Verification Server **141** knows which data to read based on information provided by the Client Location **110** and retained from the original work.

Content Repository **142** stores content and verification data, such as encoded content, sample data, and index data. In a preferred embodiment, the Content Repository **142** is a Sun Solar is E450 server with a Redundant Array of Inexpensive Disk ("RAID") as storage and a Veritas file system. The content and verification data may be accessed by the User Interface Server **120** or the Verification Server **141**.

Statistics Server **145** collects data about the electronic works, such as how many partners or clients have access to a work, how many works are available from each artist, how many works are available for each type or category of works, what works are the most popular, what are users' typical click streams, or any other useful data. For example, Statistic Server **145** may receive information from the Client Locations **110**, such as what and how often works are uploaded, purchased, or played. Statistics Server **145** could record this information so that the artists may be compensated based on how often their work was used. Statistics Server **145** could also collect a variety of other data, such as billing or advertising.

In an alternative embodiment, Statistics Server **145** may maintain a database with user or partner information, such as how often a user accesses the site, what types of works the user accesses the most, what are users' typical click streams, how often does a partner request that user access, what types of works does a partner usually requests, what are partners' usual click streams, or any other useful information. This information may be used to make the system more user-friendly, target advertising or promotions, or many other uses.

Content Acquisition System **150** acquires content for the present invention. The Content Acquisition System **150** may only include a single computer with a ripper and encoder. However, as the volume of works being added to the system increases, it may be necessary to implement a database-mediated, multi-machine parallel distributed-load architecture to rapidly extract content from different forms of media, such as tapes, CDs, DVDs, etc., as shown in FIG. **2**.

FIG. **2** shows a preferred embodiment of the Content Acquisition System **200**. In this embodiment, the content acquisition system includes a content acquisition database **210**, a plurality of rippers **215**, a plurality of encoding machines **220** and one or more storage devices **142** or **225**. The content acquisition database or server **210** may be a dual Intel processor running a Linux operating system, Apache web server, and MySQL database. The rippers extract data from a physical copy of the work. There are a variety of types of rippers **215**. Rippers **215** may be used extract data from CDs, DVDs, Digital Audio Tapes ("DAT") or any other physical work. In a preferred embodiment, the rippers **215** are single-processor personal computers running Linux software. The personal computers preferably have Plextor® CD-ROM drives, which are optimized for digital audio extraction.

The encoders **220** may perform any of the well known methods of encoding. In a preferred embodiment, the method of encoding includes compression. Also, the encoders may include dual processor personal computers running the Linux operating system. Content acquisition database **220** may be a personal computer running Linux and a MySQL database engine.

In the preferred embodiment, the rippers **215**, encoders **220**, and content acquisition database **210** are equipped with 100 Mbit Ethernet cards and are coupled to the 100 Base-T Ethernet Standard, but could be implemented according to other standards or on other networks. The storage device is equipped with multiple gigabit Ethernet cards.

The parallel, distributed-load architecture separates the plurality of ripper machines **215** and the plurality of encoder machines **220** because the rippers generally work faster than the encoders. The system balances their relative speed by having more encoders **220** than rippers **215**. A preferred embodiment of the present invention uses a 1:3 ratio of rippers **215** to encoders **220**, respectively. In this embodiment, the ratio is, in effect, 1:6 because the encoders are dual processor machines, making there six encoding processors for every ripping processor. The ripper to encoder ratio may vary significantly in other embodiments depending on the desired throughput and other system requirements.

The rippers **215** and encoders **220** may be coupled in a variety of configurations. In a preferred embodiment, they are coupled as follows. Each encoder is coupled to each ripper so that each encoder may receive data from all the rippers. In some embodiments, data from a works may also be distributed to multiple encoders **220**. The connection between the encoders **220** and the rippers **215** is preferably a high speed data bus. Also, while the rippers **215** and encoders **220** are interconnected, they are not interdependent, so that an individual ripper or encoder may fail and the remaining machines will continue to operate normally.

In a preferred embodiment of the Content Acquisition System **200**, the system may also use a queue-based, database-mediated configuration. The queue-based, database-mediated configuration helps compensate for those embodiments where the encoders **220** are slower than the rippers **215**. In such embodiments, if all the encoders **220** are busy, the rippers **215** may store the data they ripped into a database and the data may be entered into a queue. The queue may use any of the many well-known scheduling algorithms, such as first-in-first-out or a priority based algorithm.

Once data is entered into the queue or database, it must be determined which encoder should receive the data. This also may be done by any of the well known schedule algorithms, such as longest available. Another example is that the encoders **220** may be numbered, and any data received by the queue or database may sequentially or randomly check to see which encoder is available. If the search is sequential, the data would always go to the first encoder if it was available. If it was not available, it would go to the second encoder. If the second encoder was not available, it would go the third and so forth. In a preferred embodiment, the data is sent to whatever encoder has been inactive the longest. Such a scheduling algorithm is advantageous because it attempts to equalize the burden and wear on each of the encoders.

In another embodiment, the encoders **220** may be programmed to check the queue or database periodically, such as every minute or hour. Also, the encoders may be programmed collectively to check the queue at staggered times so that data is never left in the queue for any extended period of time. Further, when they are programmed collectively, if the encoder scheduled to check the queue at a given time is busy, broken, or off-line, the program may reassign that responsibility to check the queue at that time to a different encoder.

In yet another embodiment, the encoders **220** may receive a message indicating that data was entered into the queue or database for encoding.

When the data is received at an encoder, the encoder may use any encoding method. In a preferred embodiment, the method of encoding includes compression. There are many well-known compression techniques, such as Microsoft Windows Media Format ("WMF"), MP3, MPEG-2 etc. In a preferred embodiment, the system stores digital audio files and compresses them with the MP3 standard.

Content Delivery System **152** pulls content from memory within the system in response to user requests. In a preferred embodiment, the Content Delivery System **152** includes a dual Intel processor running a Linux operating system, Apache web server, and Squid cache software to deliver electronic files. In a preferred embodiment, the Content Delivery System **152** includes a plurality of servers or databases, a coder/decoder, a translation module, and a validation module. The servers or databases provide temporary content storage for frequently requested content. The coder/decoder decodes the request for content. The translation module uses the request for content to uniquely identifying the requested content. The validation module validates that the user is entitled to receive the requested content.

In operation, the system and method of providing electronic works may include content acquisition, access and distribution. As discussed briefly above, content acquisition includes a system and method of acquiring content or electronic works into a database. Content distribution includes a method or system for providing users access to these electronic works.

To acquire content or electronic copies of works (i.e., electronic works), a distributor may obtain the content from physical copies of the work (i.e., physical works), create an electronic work, and store the electronic work in the Database Server **135**. In a preferred embodiment, a distributor may obtain an electronic work from a physical work, such as a CD. The distributor may extract the content of the CD with a ripper. Once the content is ripped from the CD, the content may be recorded into a database. Accordingly, the distributor can provide users with access to the electronic work over the network **130**.

In a preferred embodiment, the distributor collects multiple electronic works to provide a more complete database. For example, the distributor may want to provide electronic works by a particular group or movies with a particular actor. Accordingly, in some embodiments, the distributor may take some steps to organize the content database, such as labeling the electronic copies or encoding metadata, such as a unique identifier, title, director, artist name, actor names, or any information potentially helpful to identify, categorize, locate, or track the work. In a preferred embodiment, each physical work is labeled with a unique bar code, such as a unique purchase code ("UPC") code. The distributor may track the bar codes throughout the system for security, control, integrity, and accounting purposes. The labeling, as well as other functions in the content acquisition, may be done with an automated system or with human operators.

The distributor may also encode the extracted data so that it may be transmitted with less bandwidth and stored with less space. In a preferred embodiment, as shown in FIG. **2**, the distributor extracts the data with rippers **215** and encodes the data with encoders **220**. The rippers can receive CDs or any other type of physical work. An operator or an automated system can scan the physical works label before the physical work is placed in a ripper. The scanned label may be stored in the Content Database **135** so that the Content Database **135** records which works were acquired.

The rippers **215** extract the raw data from the CD one track at a time until it has extracted all its data. Next, the rippers **215** temporarily store the data from each track in a separate uncompressed digital data ("WAV") file on a local hard disk. In alternative embodiments, the data may also be stored in a separate database.

The ripper also randomly extracts portions or "samples" of the raw data from each track on the CD. These samples are used in the verification process (i.e., a process that determines whether the user is authorized to access an electronic work) described below. In this embodiment, the samples may be any predetermined amount of the data. In the case of CDs, the CDs are divided into sectors, wherein one second of music includes 75 sectors. The rippers **215** may extract samples of any size. The samples may be

identified randomly, sequentially, or by any programmed algorithm. The ripper may extract one or multiple samples. The one or more samples may be from one work or several works (e.g., songs or tracks) within a larger work (e.g., a CD or DVD).

The ripper may also store each sample as a separate file, store each sample separately with a separate index file, store the samples collectively as a file, or in many other combinations. Index data corresponding to the samples may be stored in many ways, such as in the same file as the raw data or in separate index file. In a preferred embodiment, the system stores this sample data in a separate file for each track and also stores a separate index file that specifies which samples the ripper extracted and where these samples can be found in the samples file. The data in the index files is then used to verify whether the user is authorized to upload, or later receive access to, the electronic copy of the work. In a preferred embodiment, the ripper extracts ten percent of the WAV data for samples. In alternative embodiments, the ripper may extract any amount of WAV data between 0–100% for samples. For security purposes, the sampling algorithm including the size and location of the samples can be confidential or random.

Once the content data, sample data, and index data are extracted, a preferred embodiment encodes the content data with the encoders. The encoders may receive the content data from the rippers **215** local memory, the content acquisition database **210**, or from any database or storage medium used to hold the raw content data until an encoder is available to encode it. The sample and index data may be stored in the rippers **215** or an associated database, such as the content acquisition database **210** or storage **142** or **225**. In an alternative embodiment, the encoders **220** may also receive the sample and index data.

In a preferred embodiment, the content data is stored in the ripper. In another embodiment, the content data may be stored in the content acquisition database **210**, and the content acquisition database **210** controls an encoding queue that controls the transfer of content data to the encoders **220**. The content acquisition database **210** loads pointers in the encoding queue or database table. The pointers identify the raw content data for the various works and point to where this raw content data is stored.

When a pointer is entered into the encoding queue, the encoding queue may actively seek an available encoder or passively wait until an encoder checks the queue or detects the new entry. In a preferred embodiment, the encoders **220** repeatedly check for entries in the queue. An encoder may also automatically check the queue whenever it completes encoding a data entry, completes a task, or is activated again after being off-line. When there is data that needs to be encoded, the content acquisition database **210** identifies the next entry in the queue. An encoder may retrieve the raw content data from the ripper that extracted the data or a variety of other storage locations.

Upon receipt of the data, the encoders **220** encode the WAV data into a compressed file, such as MP3 or other formats. In a preferred embodiment, the encoders **220** encode one or more files for each song; for example, the encoders may encode one instance at 128 kilobits per second (i.e., near CD quality) and a second instance at 24 kilobits per second (i.e., AM radio quality). Depending upon the desired sound quality, encoding can be done at a variety of bit rates.

In another embodiment, the content acquisition process can skip the encoding process where the data is already in a suitable compressed format. For example, a DVD is already in compressed MPEG 2 format, so no further compression may be needed. Similar applications can include WMF, MPEG-4, or the like. In these situations, the content acquisition can simply rip the data from the DVD and skip the encoding phase altogether.

Once an encoder completes encoding all the tracks from a CD, the encoder notifies content acquisition database **210** the encoding is complete. The content acquisition database **210** then inserts an entry, a pointer (i.e., completion pointer), or set of pointers into the encode queue. A completion pointer indicates that all these tracks are encoded and ready for storage. When the content acquisition database **210** detects that all the smaller works (i.e., tracks) within a larger work (i.e., a compilation of several works) are encoded, the queue tells content acquisition database **210** to move the larger work into a finalizing queue.

The encoders **220** monitor the finalizing queue and transfer the encoded data in the queue out to a storage machine, such as the content acquisition database **210**. Each encoder may write to the storage machine in parallel. The encoded data may be transferred to the storage machine by a number of well-known techniques. In one embodiment, the file with the encoded data may include the sample data and the index data. In another embodiment, the sample data and index data may be sent to the storage machine from other machines, such as the ripper that extracted the data, in parallel to the encoded content data from the encoder(s).

In a preferred embodiment, the encoded data may be transferred to storage as follows. The ripper that encoded the work may be connected to the storage machine. Through this connection, that ripper forwards the sample and index data for the completely encoded work. The encoder that encoded the content data also connects to the storage machine and forwards the encoded data to the storage machine. In alternative embodiments, multiple encoders may have encoded different tracks in the same work so that each of these encoders would need to forward their encoded data to the storage device. The transfer of data from the encoder or encoders and the ripper may occur in parallel or series. In yet another embodiment, the encoded data may include the sample and/or index data. Thus, a transfer of data from the ripper may not be necessary.

In a preferred embodiment, the encoders **220** transfer encoded versions of each track to the storage machine **142**. Thus, the storage machine **142** contains an encoded electronic work as well as its corresponding sample data and index data.

Once the content acquisition database **210** stores the electronic work, the content acquisition database **210** acquires and associates the artist, title, and track name information for the stored work through direct data entry or third party databases. In an alternative embodiment, people can manually enter this information into the content acquisition database **210**. In yet another embodiment, this data may be automatically obtained from the metadata or other types of information stored in the physical work, such as electronic or digital watermarks. The content acquisition database **210** uses a web-based tool to interactively verify that the metadata is correct. If approved, the content acquisition database **210** may update and name the files on the storage machine to reflect the artist, title, track name information, director, actors, or any other potentially useful information.

In a preferred embodiment, the data acquired by content acquisition techniques is stored in a central database, such as

the content acquisition database **210**. In a preferred embodiment, the content acquisition database **210** may be the same as the Content Repository **142**. In an alternative embodiment, data could be stored in a decentralized architecture, including smaller databases at different locations. In either a centralized or decentralized architecture, the frequently accessed data could also be temporarily stored at remote locations, such as temporary memory locations at the Client Location **110** or at nodes throughout the network **130**, such as signal transfer points, central offices, cable nodes, etc.

Once the content is acquired or made accessible from a third party, a user can access this content with a personal computer **115**, cell phone **116**, or any device with Internet access. More specifically, the user accesses the data through the User Interface Server **120**. The User Interface Server **120** displays a web page to users that access the system over the network **130**. To access the system, the web site preferably requires the user to login before the user is permitted to access the site. FIG. **3** shows an example of a typical login **300**, which requires the user to enter a previously assigned user identification and password. Typically, the user identification is freely displayed when entered, but the password is masked to prevent unauthorized user from obtaining an authorized user's password. The login procedure may also permit the user to change their password. Further, if an unauthorized user wants to become an authorized user, the login procedure could provide the unauthorized user with an additional screen(s) requesting information needed to become an authorized user, such as name, address, company, telephone number, credit card number, etc.

Once the user accesses the system, the system offers to provide or distribute a plurality of works to the user over the network **130**. The works may include audio, video, audio/video, and many more. The works are preferably musical works, music videos, movies, advertisements and promotions. The list of works is viewable and/or searchable by categories, such as artist, type of work, type of music, type of movie, alphabetical order, etc. The list of works may include a list of promotions, advertisements, infomercials or other promotional works. From this list, the user may select the works it wants to receive. In an alternative embodiment, the user may be able to create their own collection of works, such as their own greatest hits or favorite movies.

The web site may also offer a variety of other functions, such as the opportunity to purchase or listen to various works or parts of works. For example, the most frequently requested works or new releases may be listed on one page. In other embodiments, each page may be dedicated to a certain category of works, such as jazz music, action movies, or high energy music. In yet another embodiment, the pages may be organized by alphabetical order accordingly to the name of the artist or the title of the work.

After the user accesses the web site and identify themselves through the login procedure, the user may also access their own personal account. The account may store copies of works that the user has bought through the web site or demonstrate authorization to receive access through other means. In a preferred embodiment, the user may receive access to some works without any verification because they are publicly available. To receive other works, the user may demonstrate that they are authorized to access the work. A user may demonstrate authorization or ownership of a physical work many ways. For example, a user may receive a confirmation number with the purchase of the work, and the web site may ask the user to enter that confirmation number. To prevent others from demonstrating authorization with the same physical work, each confirmation number will only be accepted by the distributor once. The web site could control the use of such numbers by comparing each entry to a list of previously entered confirmation numbers in a database.

In another preferred embodiment, the user would load their physical work into their client machine. For example, the user would load their CD into the CD tray of a personal computer. The User Interface Server **120** could then request information about that work the personal computer, such as the title of the work, title of the artist, and a unique label code on the work. With this information, the Verification Server **141** attempts to identify the corresponding work in the Content Repository **142**. By identifying the corresponding work, the Verification Server **141** can verify that the user has an authorized physical copy of the work.

To communicate with a server or system within the Distributor Location **100**, client machines may issue commands to the Distributor Location **100**. These commands may include tokens, which are typically the name of the command. Additional tokens on the command line include attribute-value pairs. In one embodiment, attributes are lower-case names consisting of 1 to 15 characters from the set of 'a' to 'z,' '0' to '9,' and '_.' The attribute values may be decimal numbers, text strings, or a size or byte length. For example, a typical command is HELO mail=matthew@mp3.com, where 'HELO' is the command name, 'mail' is the attribute name, 'matthew@mp3.com' is the value associated with this attribute name. There may be zero or more attribute-value pairs as part of the command. In particular embodiments, one attribute can have multiple values.

In response to these commands, a server may transmit responses back to the client machines. Each response includes a number representing a status. Zero or more attribute-value pairs may also be included with the command.

To establish a connection between a client machine and the Distributor Location **100**, the client machine sends a command to the server in order to identify itself. This command preferably includes at least one attribute that identifies the client or user. This attribute can be the user's email address (e.g., mail=matthew@mp3.com) or a user identification that the Distributor Location **100** previously assigned to the user, such as a confirmation number or unique identification number. On a secure connection, the user may send a clear-text password. Similar attributes may also be used in setting up this connection. The Distributor Location **100** responds by confirming proper identification, requesting further information, or sending an error message.

For example, a preferred command is the verify CD command, "VFCD time=3299 tkof=150, 20527, 41050, 49605, 74047, 106747, 127405, 144647, 170740, 186637, 202832, 223672." The 'time' attribute is represented in seconds. For example, there are 3,299 seconds of data on this particular CD. The 'tkof' attribute is a multi-valued list of track offsets in sectors. The first number, 150, is the sector offset to the first track on the disk. The second number is the sector offset to the second track on the disk, and so on. The second-to-last number is the sector offset to the start of the last track. The last number is the sector offset to the first sector past the last track; in other words, the length of the disk in sectors. Thus, on this CD there are eleven tracks or songs. Alternative validation attributes can include the title of work, the name of the artist/performer/band, the name of the leading actors, etc.

Another preferred Verification Server **141** command initiates a request for data from the physical work, such as "RVDT trck=1 sect=12071 nsec=4 size=9408."In response, the client machine sends the requested bytes of data, which in this example, corresponds to the four sectors of data found on track **1** and starting at sector **12071**.

In some embodiment, Verification Server **141** may compare the data from the physical work loaded by the user to a single electronic work stored in a database. In other embodiments, a server may compare the data from the physical work to multiple electronic works because the work was copied multiple times. In the CD example, this may occur because a certain work was pressed into a CD multiple times or with multiple machines. For example, a music group may have first pressed a CD of a work in May 1995, but then pressed a new CD for the same work in May 2000. Accordingly, although the works appear the same from listening or watching the work, the two electronic copies may be different. Further, a group may have a work pressed with two different machines for the same release. Accordingly, in these instances, a preferred embodiment would have an electronic copy of the CD from each pressing. Specifically, the distributor would have an electronic copy from a CD pressed with each of the two machines in May of 1995 and an electronic copy of the CD pressed in May 2000.

With all three electronic copies, the Verification Server **141** would be able to verify authorization to access the work with any of the CD including that work. Whereas, if the distributor only had an electronic copy of the work as pressed in May of 1995, a user may be unable to demonstrate authorization to access the work with a CD pressed in May of 2000.

Once the CD is loaded into the computer's CD tray, the comparison of the stored electronic data to the data from the physical work may start automatically or upon the user's direction. In a preferred embodiment, as shown in FIG. **3**, the user could initiate the comparison by selecting an icon displayed on the web page, such as the start icon **310**. The user may also be able to cancel or eject the work from their machine by selecting an icon on the web page, such as the eject icon **315**. Also, a web page or any type of display may show the name or some type of identifier of the work **320**, as well as the status of the comparison **325**. The status field could show statuses, such as "comparison in progress," "comparison of sample 4 in progress," "comparison on hold," "comparison third in queue," etc.

The display may also provide customer service options, such as an online help menu, an icon to obtain a live customer service representative, or an email field that provides a email field including the email address for the user to send an email to customer service representative. The live customer service representative could be down with a separate telephone line connection, such as a return call or a Voice Over IP connection. These customer service options may also provide information about the works.

In a preferred embodiment, if the machine at the client location is a personal computer, the personal computer **115** may have customized software to conduct the verification. The software on the user's machine may collect and send a stream of data corresponding to the track offsets associated with each track. Similarly, software at the Distributor Location **100** may also receive the track offset information or other information about the work for use in the verification process.

In alternative embodiments, multiple software programs may be use to collect information from the physical work and send that information to the Distributor Location **100**. Such information may include title, artist, actor names, UPC code, digital watermarks, or any other useful information.

There are many types of comparisons that could be made to verify a user's authorization to receive access to a given work based on data from a physical work. One such comparison is a comparison of the track offset data on the stored electronic copies of the work and the corresponding track offset data on the physical work loaded into the user's machine. In a simplified example, if the track offset data of the physical work is 150, 19860, 39740, 59130 for each of the first four works, the distributor's server or servers can search its database for all stored electronic works with similar track offset data, such as track offsets within a range of values. These ranges may include the following track offset ranges for the physical work: 80–220; 19790–19930; 39670–39810; and 59060–59200. Thus, a search using these ranges would produce the following three electronic works:

Electronic Work A: {150, 19860, 39740, 59130}

Electronic Work B: {110, 19810, 39690, 59080}

Electronic Work C: {170, 19900, 39790, 59170}

In another embodiment, a search for the exact match may be performed before the system performs the flexible range search. Although, exact matches require more accurate recordings, an exact match search may reduce the search time and more quickly identify the related electronic work. For example, using the above facts, such a search would only identify Electronic Work A.

In yet another embodiment, the distributor's servers may only search a subset of their stored electronic works, such as the works with a certain identification code, the works with the same or similar titles, the works from a given artist, etc.

Further, the comparison may search for one track offset or multiple track offsets within a work. For example, the software may compare the track offset for each work on a CD, may compare several track offsets within the same work, or may compare any combination thereof. The location of the track offsets used for these comparison may be predetermined, one of a finite number of possible comparison scenarios, or randomly selected for each work.

In another embodiment, the comparison may include multiple layers of searching. For example, the comparison may first check the database to determine whether there are any stored works with the exact track offsets. If no such work exist, the comparison could proceed to check whether there were any works with almost exact track offsets by searching for a small range, such as a track offset from 120–180. If such a work is still not found, the comparison may search for works within a larger range, such as 80–220, and so on.

In another embodiment, the comparison may also include layers to distinguish between two works identified during the same search. For example, if a search identified two works, the comparison may compare a different set of track offset or set of track offsets. If the first search only looked for works with a track offset of 120–180 for the first work on a CD and the search identified three stored works. The comparison may proceed to compare the track offsets of the second work on the CD or from just another portion of the CD.

If there are no stored electronic works within specified range, the User Interface Server **120** may inform the user that their physical work was not accepted or not eligible for inclusion into their personal account. The User Interface Server **120** can also provide the user with the plurality of customer service options identified above. In alternative embodiments, the system tests to identify whether the physi-

cal work, confirmation number, UPC code, or other authentication information enter was already entered by a previous user or for some other reason appeared fraudulent. The system could automatically preclude the user from any further access to the user's personal account and prevent them from logging back in.

If the comparison identifies a stored electronic work that is within a specified range, the User Interface Server **120** may allow the user to upload the data on their physical copy to the Content Repository **142**, or may provide a pointer to the stored electronic work within the user's personal account. If the comparison identifies one or more electronic works that are close, but not close enough to authenticate the user's ownership of the work, the system may continue to verify the user's ownership of a physical work with additional tests.

Another technique to verify a user is otherwise authorized to receive access to an electronic copy of the work is to compare portions of the physical work to portions of the stored electronic work. This type of comparison could be the only comparison used for verification, or can be used after the number of works for comparison has already been reduced by other means. For example, before comparing portions of the physical work to the electronic work, some embodiments may narrow the number of stored electronic works for comparison based on other information about the work, such as the artist, title, year, etc.

In a preferred embodiment, this comparison is run after the track offset comparison to narrow the number of eligible works. For example, the Verification Server **141** can request that the user's machine to send a portion of data, such as the 5 sectors of data found on track two beginning at the thirtieth second of playing time. The portion of data requested may be predetermined or determined randomly. The user's machine responds by sending the requested sample of data. The Verification Server **141** then compares this requested data with the samples of data previously extracted and stored during the content acquisition.

Such a comparison may simply compare each sample or the comparison may add some additional steps to make sure that the comparison is comparing like data. For example, the straight comparison of samples may be used with equipment that accurately reads the recorded works or the samples are identified in a way that minimizes problems caused by mechanical error, as shown by FIG. **4**.

In a preferred embodiment, such a comparison may make sure it is comparing like data with many well-known techniques, such as correlation and/or phase shifting. Specifically, the Verification Server **141** requests a portion of data from a client machine. The client machine collects this data from a physical work and sends this data to the Distributor Location **100**. The Verification Server **141** receives the corresponding data collected from the physical work and determines whether this data can match up with the data of one or more stored electronic works. To reduce possible problems caused by mechanical error, the comparison may not match the data exactly as it is received. Instead, the Verification Server **141** may first identify whether any portion of the sample received from the first work potentially matches any portion of a stored electronic work or sample of a stored electronic work. Once it identifies the corresponding portions of data for maximum correlation, the Verification Server **141** may use correlation and/or phase shifting techniques to manipulate the data so that the comparison is not thrown off by mechanical inaccuracies, such as the inaccuracy of the user's personal computer reading a CD.

For example, as shown in FIG. **5**, the customer sample may need to be shifted forward or backward to perform a more accurate verification. The results of shifting one of the samples across time is shown in FIG. **6**. Once the Verification Server **141** identifies the corresponding portions of the samples with maximum correlation, Verification Server **141** can size down the two waveforms until they contain the same portion of the track, as shown in FIGS. **6** and **7**.

Once the most closely corresponding portions of the samples or works are identified, the verification process compares these possibly corresponding portions of the samples. In a preferred embodiment, the verification process runs a Fast Fourier Transform ("FFT") algorithm on each WAV samples to generate their respective power spectrums. The computer can then compare these two spectrums.

The Verification Server **141** performs the FFT. The FFT provide a frequency analysis of the data. The Verification Server **141** compares either or both channels of a stereo audio file and averages the results. When the data on the physical work matches the data on the electronic work perfectly, the difference between the audio files in the power spectrum can be 0.000. Conversely, if a CD is badly scratched at this specific location on the disk or the physical work is different from the electronic work, the two data may not compare too well. However, in a preferred embodiment, a scratch should only affect one or two samples of the 20 samples so that the system could still recognize the match. Additionally, as an alternative to FFT, the Verification Server **141** can perform direct waveform comparisons of the sampled and stored data.

If the received information identically or substantially matches only one stored CD, then the Verification Server **141** automatically stores a pointer to the formatted version of this title in the client's personal account. Otherwise, the Verification Server **141** asks for additional data (e.g., send the seven sectors of data found on track four at the tenth second of playing time). The system repeats this process until it has received an acceptable amount of data to verify or reject the CD in the user's machine or until it completes a predetermined set of requests. The number of requests for information by the Verification Server **141** can vary as necessary, as can the number of channels of data and sampling rate.

In an alternative embodiment, the Verification Server **141** can make all of its requests for information and complete its verification process before notifying the user that their request has been verified or rejected. This embodiment protects the integrity of the interrogation process, because the user's machine receives no feedback as to the specific point where the request failed. In another embodiment, the entire verification process can be repeated to further narrow the number of works found within a search or to increase the certainty of the process.

The system can also repeat the verification process for each work that the client desires to have in their personal account.

In another alternative embodiment, the verification step may not include loading a physical work into a client machine at all. Instead, the user may demonstrate that they ordered a physical work. The Distributor Location **100** may recognize that the user ordered a physical work in many ways. For example, in a preferred embodiment, the distributor may know that the user purchased the work from a retailer because the retailer sent the distributor a message authorizing the distributor to provide the user with access to an electronic work. To control the integrity of these messages, the distributor may only accept such messages

from certain IP addresses, or may require the retailer to provide a security key or password.

In another embodiment, the Distributor Location **100** may know that the user has ordered a physical work because the order was submitted through the distributor. Thus, the distributor takes the order and records the information related to the order, including user name, email address, credit card number or other billing information, unique identifier of the ordered work, or confirmation number, and forward the order to the retailer. In yet another embodiment, the Distributor Location **100** may obtain verification that the user purchased the work based on a confirmation number entered by the user or retailer.

In another embodiment, the Distributor Location **100** may receive the order information from another location, such as a partner or other third party. In a preferred embodiment, the distributor is partnered with a retailer. For example, the distributor may communicate with a plurality of retailer locations via an application program interface made for retailers. The retailer API may enable retailers to host user accounts, folders, or files. In this example, a user purchases a work from a retailer, the retailer sets up a user account. Then the user can purchase a work from the retailer and shortly thereafter access the work via the network **130**. Further, the distributor or retailer can deactivate access to a work if the consumer returns or exchanges the work later.

If the user returns a work, the retailer may deactivate the user's access to an electronic copy or notify the distributor to deactivate the user's access to the electronic copy. The retailer may check to determine whether the user already accessed the electronic copy before it allows the user to return the work. For example, the retailer may not allow the user to return the work if the user already accessed the electronic work. In yet another alternative embodiment, the retailer API can allow retailers to access a user's account or folder at the Distributor Location **100**.

In a preferred embodiment, the retailer API may perform one-way authentication to verify the identity of the retailer. For example, the retailer would need to enter a login and/or password, or any other well-known technique that the order or authorization information is actually from a retailer.

Also, such communications between a retailer and distributor are preferably secure (i.e., encoded and/or encrypted) to prevent a non-retailer from obtaining a retailer's retailer identification or password. For example, the retailer API secures the retailer's identification and/or password with encoding or encryption.

In other embodiments, the system may use one of many available encryption methods (public or nonpublic). A basic introduction to some encryption and decryption techniques is described in the text written by Bruce Scheiner entitled *"Applied Cryptography: Protocols, Algorithms And Source Code in C,"* published by John Wiley & Sons, 1994, the entirety of which is hereby incorporated by reference. Moreover, more detailed descriptions of systems and apparatuses for accomplishing encryption and decryption in computer networks are set forth in U.S. Pat. Nos. 5,903,652, 5,850,442, and 5,580,446, the entirety of each of which is incorporated by reference.

When encryption is used, each retailer API may have a unique encryption key that is shared with the Distributor Location **100**. The Distributor Location **100** uses this unique encryption key to identify and authenticate the specific retailer API.

In a preferred embodiment, the retailer API may send various types of data packets or API function calls to the Distributor Location **100**. These packets can include user email data, a retailer identification, an order number, a UPC, and band, title, checksum data, or any other potentially useful data. For example, a retailer may issue an "activate_cd" (user email, order #, retailer id, UPC, band, title) message to enable the user to listen to the purchased work. When the server tier **28** receives an activate_cd request, the Verification Server **141** checks to see if the transaction already exists in an invoice table. If it exists and is active, it is ignored. If it exists and is inactive, the system activates the record and sets the appropriate media for the user to "purchased." If the record does not exist, the system creates invoice and verification records for the user. The verification table stores the status as "purchased" in the verification table. The server then returns a confirmation of this transaction to the user via email. If the Verification Server **141** cannot find an appropriate match for the requested work identifier, such as UPC, title, or band, then the work does not exist in the Content Repository **142**. The Verification Server **141** then communicates this to the user and to a customer representative with the distributor so that distributor may attempt to add this work to their database.

The retailer may also issue a "deactivate_cd" (user email, order #, retailer id, UPC) to disable access to a CD for a particular customer. When the Distributor Location **100** receives a deactivate_cd call, the Verification Server **141** checks to see if the transaction exists in the invoice table. If it does not exist, it is ignored. If it exists and is deactivated, it is ignored. If it exists and is active, then the system deactivates it. The Verification Server **141** will then check to see if the user identification has any other active order for this particular work. If so, then the Verification Server **141** takes no further action, because the user owns another copy of the work under a different order or retailer. If this is the last order with this media identification, the Verification Server **141** sets the media identification in the verified table to "unpurchased."

The retailer may also send a "has_accessed_cd" message when a user attempts to return or exchange a previously purchased work. When the Verification Server **142** receives this message, the Verification Server **142** checks the user's account to see if the user has previously accessed (i.e., downloaded, streamed, opened, read, watched, or listened to) the electronic copy of the work. The Verification Server **142** also checks the invoice table to see if the user owns multiple copies of the same work. If the user only owns one copy of work and has not previously accessed the work, the Verification Server **142** communicates this information to the retailer API. If the user has multiple copies of the work, then the system only knows that the consumer has listened to at least one copy and will communicate this information to the retailer. The consumer thus cannot exchange this CD. If the user has previously used their electronic copy of the work, the retailer may not permit the user to exchange the work.

Once a work is loaded or accessible to a user, the user can access those works through a variety of graphical user interfaces and organization models, such as a juke box, alphabetically, by artist, by type of work, by category of work, by verification date, etc.. In a preferred embodiment, the works are organized as shown in FIGS. **8–19**.

The user may be provided with access to the electronic works identified in their account by downloading, streaming, email enclosure, or many other well-known techniques. Such access may be provided via the user's personal computer, cell phone, personal digital assistant, pager, car stereo, television or any media player. Before providing such access, the Content Delivery System **152** may attempt to

identify what media player the user is accessing the works with. These characteristics may be automatically provided to the Distributor Location **100** as a header or some other information field included with the user data. The Distributor Location **100** could also request the information automatically from the user's device or the user. If the information is requested from the user, the user could identify their device by manually entering "cell phone" into a blank field or selecting their device from a list of available devices. In an alternative embodiment, it may also be able to identify the user's device to accommodate for geographically specific server farms.

In a preferred embodiment, a user may access the works identified in their account from anywhere connected to the network **130**. Since this network is preferably the Internet and may be accessed with cellular transmission, such access is geographically unrestricted. In an alternative embodiment, the network **130** may be a local or regional network with geographical restrictions.

In another preferred embodiment, a user may be provided with a work by the Content Delivery System **152**. The Content Delivery System **152** receives a request for access to a particular piece of content or work either directly from the user or from another component with the Distributor Location. As part of the request, the System **152** may receive or generate a secure, tamper proof, encrypted URL to represent that request. Within the Content Delivery System **152**, the coder/decoder decodes the URL, forwards some of the information with the request to the translation module, and discards the remaining information. The translation module translates the URL into a unique identifier of the requested content.

The validation module validates that the user is entitled to receive the work. In a preferred embodiment, the validation module performs Valid From Date ("VFD") data management and concurrency checking. The validation module performs concurrency checking by monitoring which users are logged into the Distributor Location **100** at any given time. Such information is useful because user accounts and lockers each have different access privileges. For example, a company may have a user account that entitles every employee of a company to access the account. To obtain such an account, the user may have paid more for a group license to a work or obtain multiple copies of the same work.

In another embodiment, the access privileges for a user account may only permit a single individual to access the account. For example, if a single user buys a copy of a copyrighted CD, only that user may access the account. Thus, if a second user attempts to access the work while a first user is already logged into the account, the system recognizes that both of these users are not entitled to access this work. When a possible breach of the access privileges is detected, the system may automatically deactivate all the works in the account, shutdown the account immediately, deny the concurrent request for access, suspend the account, or prohibit any subsequent access to the account. In addition, the validation module may log information about the concurrent request for access, such as the user identification, the time, where they were logging in from, etc. and notify the user of the integrity breach so that they can explain themselves if it was a mistake.

With regard to VFD data management, the Content Delivery System **152** validates the time stamp embedded within the URL. The time stamp indicates the time at which the work was selected. Such a time stamp may be used for validation by testing whether the time stamp expired, testing whether the time stamp was before the VFD of the user's account, or a variety of other ways. For example, a URL may be acquired at 9:00 am and expire twenty four hours later so that any attempt to access that URL after 9:00 am the next day is not validated.

In another example, the URL representative of the request for access to a work is compared with the VFD of the user's account. If the time stamp on the URL of the request is before the VFD of the user's account, the request is not validated. Such a test may be used to preclude users from sharing account information or other unauthorized uses. For example, the Content Delivery System **152** may recognize that a user shared their account information due to concurrency checking. Accordingly, the Content Delivery System **152** may reset the VFD on the user's account so that any URLs acquired prior to that time are no longer valid. Further, if both the account holder and the unauthorized user were identified to have account, the System **152** could reset the VFD on both accounts. In another alternative embodiment, the VFD may be automatically adjusted for accounts using limited time offers, such as a distributor providing user's with free access for thirty days or an artist providing free access to their work for a week.

In another embodiment, the validation module validates the user based on a counter. For example, when a work is provided to a user, the user's counter is incremented. When the act of providing the work to the user completes, the user's counter is decremented. If a URL is requested and the user's counter exceeds one, the user's request is not validated and the "valid from date" is set to the current date and time. In yet another embodiment, the media player software, known as the User Agent, used to receive an electronic work via download or stream is recorded in the user's account information. If subsequent works are requested by a different User Agent, the request is not validated and the VFD is set to the current date and time. Similarly, the Autonomous System Number ("ASN") (i.e., essentially a map between the IP address and the Internet Service Provider) associated with a user's requests is recorded. If a subsequent address is made from a different ASN, the request is not allowed and the VFD is set to the current date and time.

In yet another embodiment, the validation module validates by comparing the current session identifier provided within a requested URL to a stored session identifier. When a user logs into their account, they receive a session identifier unique to that machine, which is stored in their account record. If the user requests an electronic work, the validation module compares the session identifier stored within the user's account to that contained within the URL for the work. If the session values are different, the request is not validated.

Once the Content Delivery System **152** validates a user, the System **152** uses the unique content identifier within the URL to determine where the requested work is stored, such as local memory, the Content Repository **142**, or some other memory. In a preferred embodiment, the Content Delivery System **152** searches for the requested work in the local storage of the particular server accessed in the System **152**. If the work is not present in the local storage of that server, the System **152** searches the local memory of the other servers or databases within the System **152**. If the work is not present in the local memory of any of the System's servers, the System **152** accesses a bridge to the Content Repository **142** to determine whether the work is stored there. If the work is within any of these memories, it is provided to the user. If the work is not present in any of these memories, the system may continue to try other servers or databases, including remote servers and databases, or it may notify the user that the requested work is unavailable.

For example, a user accesses the web site provided by the distributor. While on the site, the user selects a work. Based on the selection, the User Interface Server **120** generates a URL. Next, the URL is provided to the Content Delivery System **152** and the user. The Content Delivery System **152** extracts a unique content identifier from the secure URL, and attempts to locate the work with the Content Delivery System **152** or the Content Repository **142**. If the work is present, the Content Delivery System **152** provides the user with access to the electronic work by downloading, streaming, broadcasting or other well-known delivery techniques.

CONCLUSION

While various embodiments of the present invention have been described above, it should be understood that they have been presented by way of example only, and not limitation. For example, the present invention is not limited to the physical arrangements or use with any particular network. As such, the breadth and scope of the present invention should not be limited to any of the above-described exemplary embodiments, but should be defined only in accordance with the following claims and their equivalents.

We claim:

1. A method of providing electronic works, comprising the steps of:

offering electronic works to a user over a network,

receiving a request for access to at least one electronic work over the network;

verifying the user is authorized to access the requested electronic work;

providing the user with access to the requested electronic work over the network; and

storing electronic works;

wherein the step of verifying includes the steps of:

receiving data corresponding to at least one track offset of a physical work, and

comparing the at least one track offset of the physical work to a corresponding track offset on at least one stored electronic work.

2. The method of claim **1**, wherein the physical work is a compact disk.

3. The method of claim **1**, wherein the step of verifying includes the step of:

acquiring identification information from the physical work, and

identifying at least one electronic work for the comparison.

4. The method of claim **3**, wherein the identification information is a title of the physical work.

5. The method of claim **1**, wherein the step of comparing compares a range of values for a track offset of the physical work to the stored electronic works.

6. The method of claim **1**, wherein the step of comparing compares a plurality of track offsets.

7. A method of providing electronic works, comprising the steps of:

offering electronic works to a user over a network,

receiving a request for access to at least one electronic work over the network;

verifying the user is authorized to access the requested electronic work;

providing the user with access to the requested electronic work over the network; and

storing electronic works;

wherein the step of verifying includes the steps of:

sending a request to obtain data corresponding to at least a portion of a physical work;

receiving data corresponding to the at least a portion of the physical work; and

comparing the at least a portion of the physical work with a corresponding portion of at least one electronic work to determine whether to grant the request.

8. The method of claim **7**, wherein the step of comparing includes correlation to identify the corresponding portions of the at least a portion of the physical work and the corresponding portion of the at least one electronic work.

9. The method of claim **7**, wherein the step of comparing includes phase shifting either the at least a portion of the physical work or the corresponding portion of the at least one electronic work.

10. The method of claim **8** or **9**, comprising the step of:

increasing size of the portion of the physical work or the corresponding portion of the at least one electronic work prior to comparison.

11. The method of claim **7**, wherein the step of comparing includes a Fast Fourier Transform analysis on the portion of the physical work and the corresponding portion of the at least one electronic work.

12. The method of claim **7**, wherein the step of comparing includes comparing time domain samples from the portion of the physical work.

13. The method of claim **7**, where the step of comparing accommodates a margin of error allowance.

14. The method of claim **7**, further comprising the step of:

repeating the verifying step.

15. The method of claim **1**, wherein the step of verifying further includes the steps of:

sending a request to obtain data corresponding to at least a portion of a physical work;

receiving data corresponding to the at least a portion of the physical work; and

comparing the at least a portion of the physical work with a corresponding portion of at least one electronic work to determine whether to grant the request.

16. A method of acquiring an electronic version of a work, comprising the steps of:

obtaining a physical work;

creating an electronic work from the physical work;

extracting samples of data from the physical work;

identifying an electronic work in an encoding queue;

retrieving the electronic work identified in the encoding queue; and

transferring the retrieved electronic work to storage.

17. The method of claim **16**, further comprising the step of providing encoders in a queue based, database mediated configuration.

18. The method of claim **16**, wherein the step of extracting further extracts index information.

19. The method of claim **18**, wherein the index information identifies what samples of the physical work were extracted.

20. The method of claim **16**, further comprising the step of:

labeling the physical work.

21. The method of claim **20**, wherein the physical work is labeled with a UPC code.

22. The method of claim **16**, further comprising the step of:

labeling the electronic work with a label corresponding to the label on the physical work.

23. The method of claim **16**, further comprising the steps of:

labeling the electronic work; and

using the label of the electronic work as a unique identifier for accounting purposes.

24. The method of claim **16**, further comprising the step of:

loading pointers to the electronic work into the encoding queue.

25. The method of claim **16**, wherein the encoding queue uses a first in, first out scheduling algorithm.

26. The method of claim **16**, further comprising the step of:

encoding the electronic work identified in the encoding queue.

27. The method of claim **26**, wherein the step of encoding encodes two versions of the electronic work.

28. The method of claim **27**, wherein the two versions of the electronic work are a 24 kilobit per second version and a 128 kilobit per second version.

29. The method of claim **24**, further comprising the step of:

inserting pointers into the encoding queue to indicate which encoded electronic works are ready for the transferring step.

30. The method of claim **18**, wherein the transferring step also transfers the index information.

31. A method of delivering electronic works, comprising the steps of:

receiving a request for access to an electronic work and a form of user identification from a device;

identifying characteristics of the requesting device;

verifying the form of user identification against stored information;

storing frequently requested items locally in memory; and

providing the device with access to the electronic work;

wherein the verifying step includes checking whether the user is simultaneously logged in from another device.

32. A method of acquiring an electronic work, comprising the steps of:

logging into a service offering access to at least one electronic work;

sending a request to access at least one electronic work and a form of identification;

demonstrating authorization to receive the requested electronic work; and

obtaining access to the requested electronic work;

wherein the step of demonstrating includes sending a confirmation number for the purchase of a physical work.

33. An apparatus for providing electronic works, comprising:

means for offering electronic works to a user over a network;

means for storing at least one of the offered electronic works;

means for receiving a request for access to at least one electronic work over the network;

means for verifying the user is authorized to access the requested electronic work wherein the means for verifying includes:

means for receiving data corresponding to at least one track offset of a physical work, and

means for comparing the at least one track offset of the physical work to a corresponding track offset on at least one stored electronic work; and

means for providing the user with access to the requested electronic work over the network.

34. The apparatus of claim **33**, wherein the means for verifying further includes:

means for sending a request to obtain data corresponding to at least a portion of a physical work;

means for receiving data corresponding to the at least a portion of the physical work; and

means for comparing the at least a portion of the physical work with a corresponding portion of at least one electronic work to determine whether to grant the request.

35. An apparatus for providing electronic works, comprising:

means for offering electronic works to a user over a network;

means for storing at least one of the offered electronic works;

means for receiving a request for access to at least one electronic work over the network;

means for verifying the user is authorized to access the requested electronic work wherein the means for verifying includes:

means for sending a request to obtain data corresponding to at least a portion of a physical work,

means for receiving data corresponding to the at least a portion of the physical work, and

means for comparing the at least a portion of the physical work with a corresponding portion of at least one electronic work to determine whether to grant the request; and

means for providing the user with access to the requested electronic work over the network.

36. An apparatus for acquiring an electronic version of a work, comprising:

means for obtaining a physical work;

means for creating an electronic work from the physical work;

means for extracting samples of data from the physical work;

means for identifying an electronic work in an encoding queue;

means for retrieving the electronic work identified in the encoding queue; and means

means for transferring the retrieved electronic work to storage.

37. An apparatus for providing electronic works, comprising:

a server for offering electronic works to a user over a network, wherein the server stores at least one of the offered electronic works, wherein the server receives a request for access to at least one electronic work over the network;

wherein the server verifies the user is authorized to access the requested electronic work by receiving data corre-

sponding to at least one track offset of a physical work, and comparing the at least one track offset of the physical work to a corresponding track offset on at least one stored electronic work; and

wherein the server provides the user with access to the requested electronic work over the network.

38. The apparatus of claim 37, wherein the server also sends a request to obtain data corresponding to at least a portion of a physical work, receives data corresponding to the at least a portion of the physical work, and compares the at least a portion of the physical work with a corresponding portion of at least one electronic work to determine whether to grant the request.

39. An apparatus for providing electronic works, comprising:

a server for offering electronic works to a user over a network, storing the offered electronic works, and receiving a request for access to at least one electronic work over the network;

wherein the server also verifies the user is authorized to access the requested electronic work by sending a request to obtain data corresponding to at least a portion of a physical work, receiving data corresponding to the at least a portion of the physical work, and comparing the at least a portion of the physical work with a corresponding portion of at least one electronic work to determine whether to grant the request; and

wherein the server also provides the user with access to the requested electronic work over the network.

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